LG CONTACTORS & THERMAL OVERLOAD RELAYS

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99 -12

Good Design, ISO 14001, ISO 9001

META MEC

CONTACTORS & THERMAL OVERLOAD RELAYS

Meta - MEC Series

CONTACTORS & THERMAL OVERLOAD RELAYS

LG Industrial Systems Co., Ltd.

The longest Lifetime I

- *Full-series from 9~800AF*
  - *The longest lifetime*
    - *Certification and Approval from authorized test lab*

IEC 60947

- **Standard:** IEC 60947, UL 508, VDE 0660, EN 60947, BS 5424, KSC4504
- **Certification & Approval:** CE, UL / CSA, Lloyd Register, Korea Register,KS, ISO 14001, ISO 9001(Including proceedings)

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eta-MEC GMC Type

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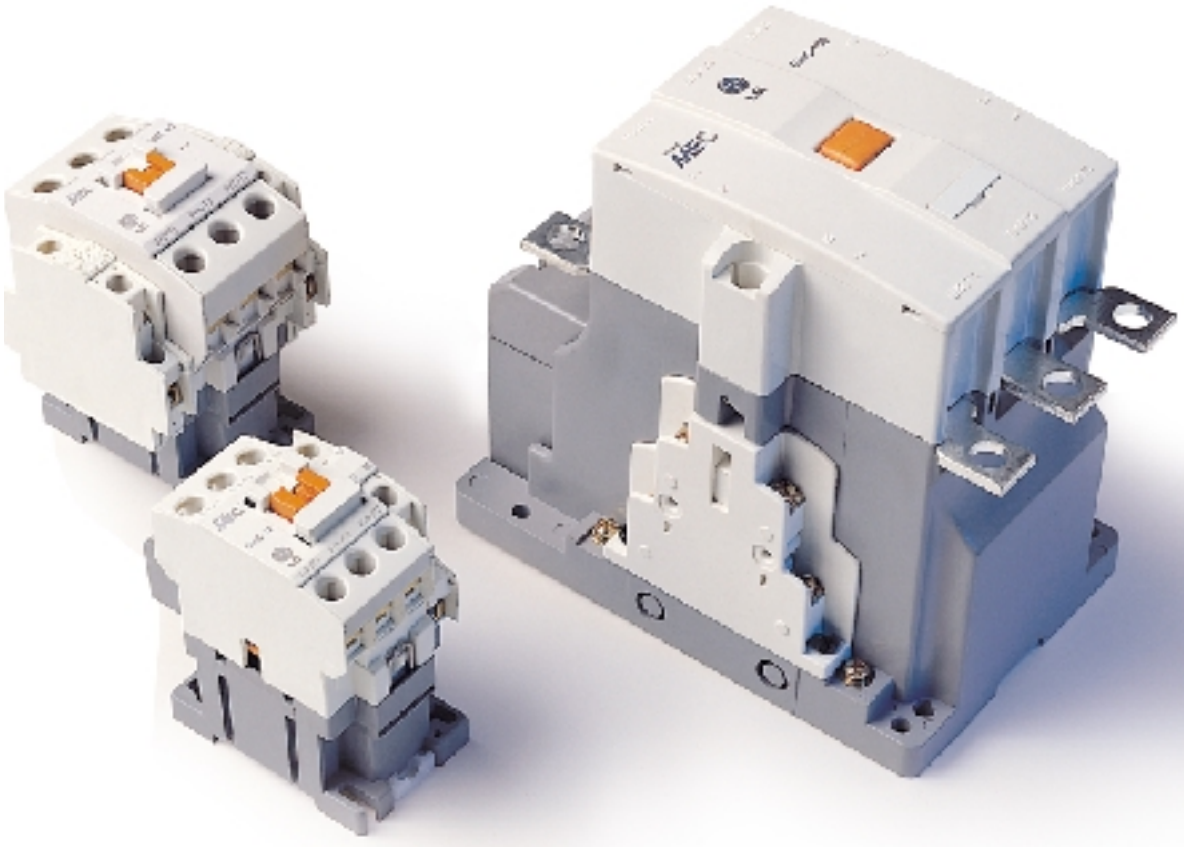

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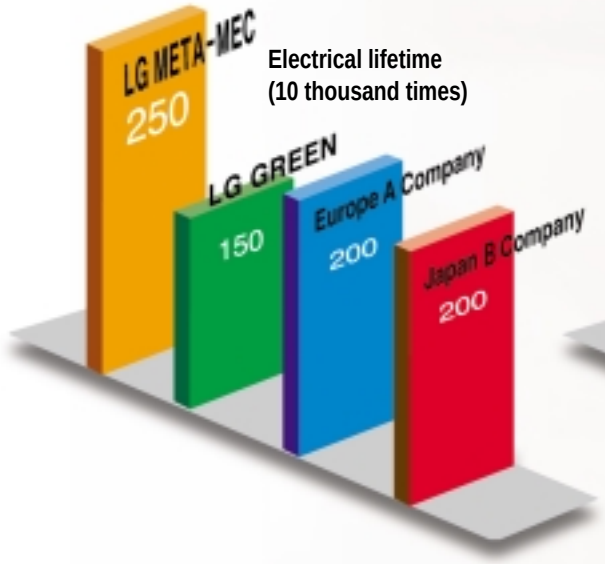
DESCRIPTION

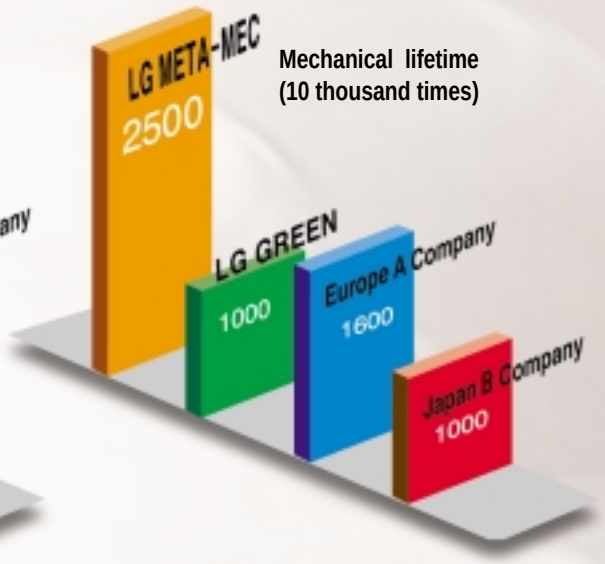
GMC-9~85(Low AF)

The longest lifetime

The longest electrical and Mechanical lifetime by the optimized design(GMC-9~22)



Electrical lifetime (10 thousand times)



Mechanical lifetime (10 thousand times)

Easy to use and safe structure

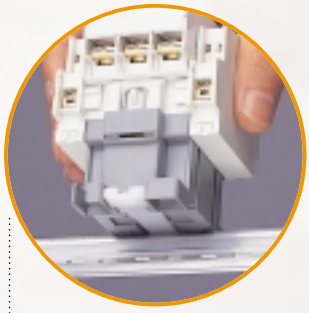
- Finger-proof in magnetic contactors and thermal overload relays (Standard)
- Modulized Aux. contacts are easy to attach and detach from the magnetic contactors

3 Frame sizes

3 External dimensions in magnetic contactors and TOR.

Direct mounting type TOR.

An additional bracket is not necessary



Two ways mounting

Din-rail 35mm mounting or screw mounting
(Push or pull to uninstall from a Din-rail)

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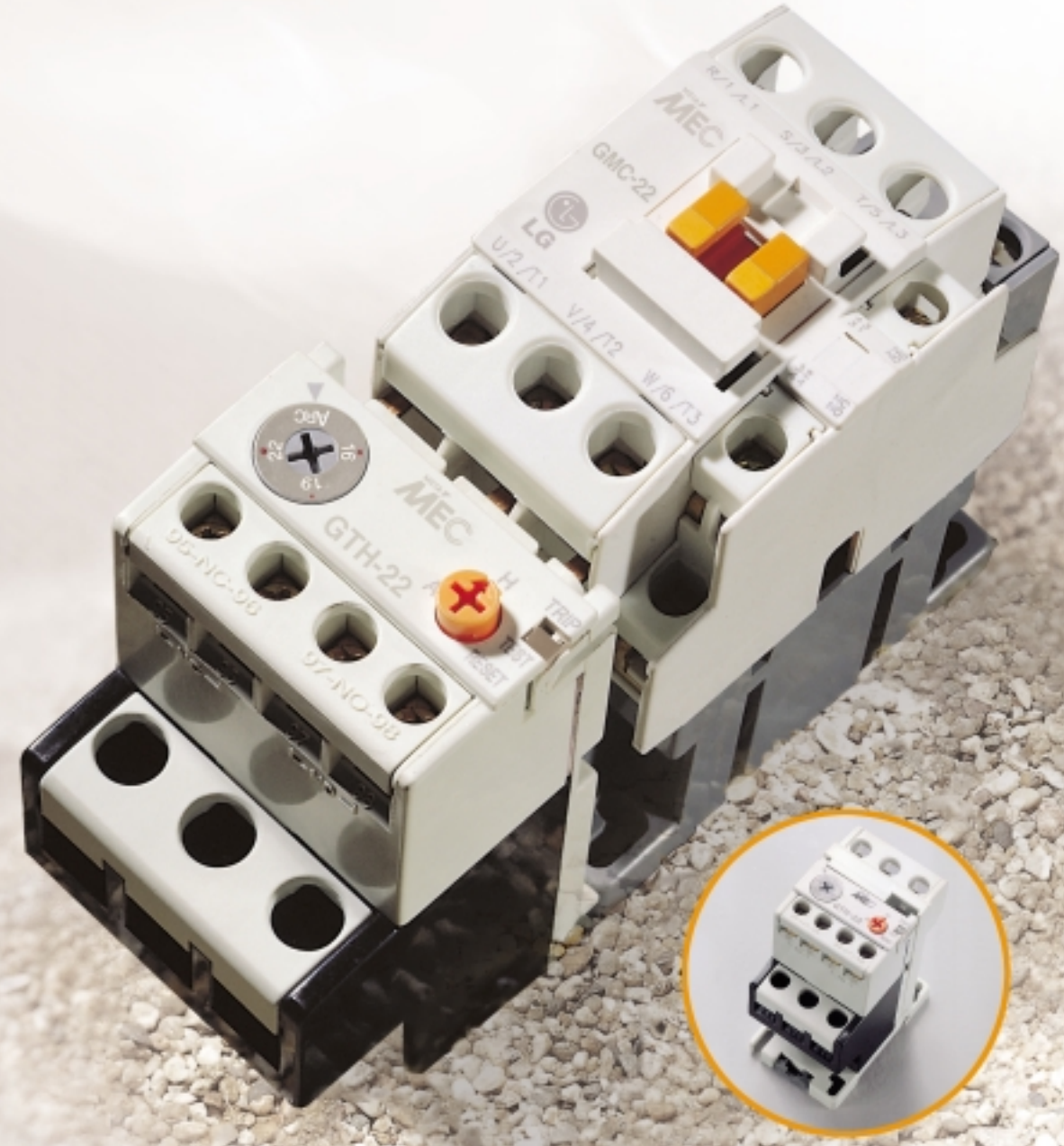
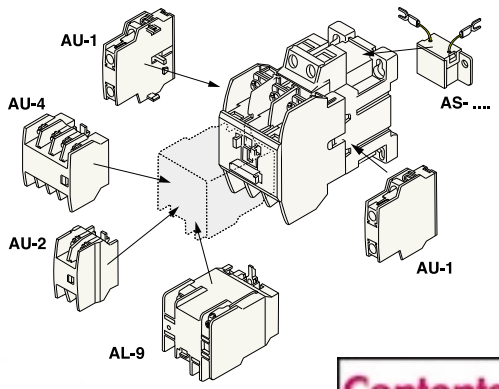
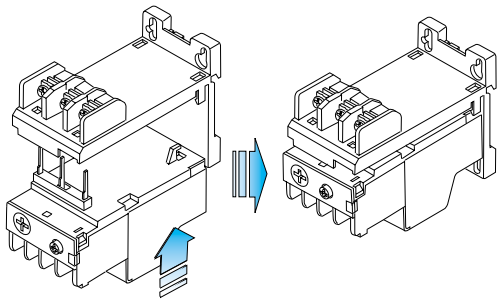


Magnetic contactors



Thermal overload relays



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DESCRIPTION

GMC-100~800(High AF)

Easy to use

- Aux. contact can be replaced without uninstall the magnetic contactors
- Aux. contact is common use from GMC-100~800

Easy to replace the operational coil

- Drawable the cassette type operational coil without uninstall the magnetic contactors

Free voltage in operational coil voltage (GMC 100~400)

- 100~240V, AC and DC common use, 50Hz and 60Hz common use

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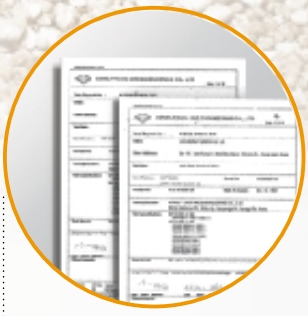
Various accessories

- Aux. contact
- Mechanical interlock unit
- Mechanical latch unit
- Delayed opening unit

Easy to wire

- Adopt the clamp terminal (Standard)



Pass the EMC test

- Safety in surge and electro-microwave

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TYPE DESIGNATION

Magnetic Contactors

GM C — 22 R AC220

GM — Magnetic Contactors

C — Type

C	AC Coil
D	DC Coil
S	Magnetic Switches
W	Enclosed starter

22 — Rated current (AC 440V basis)

9	9A	100	105A
12	12A	125	120A
18	18A	150	150A
22	22A	180	180A
32	32A	220	250A
40	40A	300	300A
50	50A	400	400A
65	65A	600	630A
75	75A	800	800A
85	85A		

R — Application

-	General / Standard
R	Reversing
L	Latching
B	Push button
MB	Push button & Plastic
M	Plastic
D	Delay

AC220 — Operational voltage

AC 24~600V
DC 12~250V

* Refer to Table 4 on Page 13

Thermal Overload Relays

GT H — 22 H / 3 L 5A

GT — Overload relay

LG Thermal overload relay

H — Application

H	General / Standard
K	Differential

22 — Ampere frame

22	0.1~22A
40	4~40A
85	7~85A
100	34~120A
150	34~150A
220	65~240A
400	85~400A
600	200~800A

H — Mounting

-	On contactor
H	Separate mounting

3 — Heater

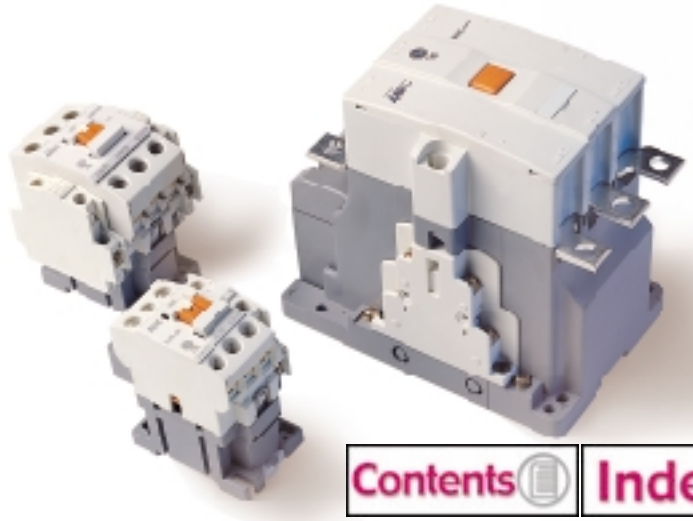
-	2 heater
3	3 heater

L — Application

-	Standard
L	Delay opening

5A — Rated current

Low AF		High AF	
0.14	0.1~0.16	41	34~50
0.21	0.16~0.25	48	39~57
0.33	0.25~0.4	56	43~65
0.52	0.4~0.63	67	54~80
0.82	0.63~1	80	65~100
1.3	1~1.6	107	85~125
2.1	1.6~2.5	130	100~160
3.3	2.5~4	150	120~180
5	4~6	200	160~240
6.5	5~8	250	200~300
7.5	6~9	350	260~400
8.5	7~10	500	400~600
11	9~13	660	520~800
15	12~18		
19	16~22		
22	18~26		
30	24~36		
34	28~40		
42	34~50		
55	45~65		
65	54~75		
74	63~85		



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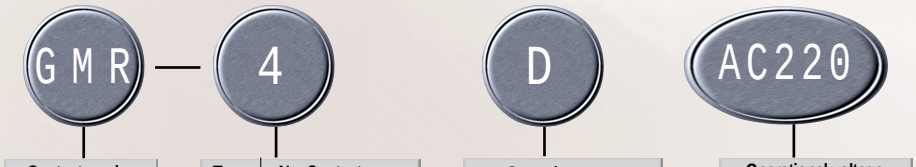
Contactor relays



Contactor relay

Type	No. Contacts
4	4 Contacts
6	6 Contacts
8	8 Contacts

Operation current	
-	AC coil
D	DC coil

Operational voltage
AC 24~600V
DC 12~250V

*Refre to Page 41

Auxiliary contacts

Auxiliary contacts

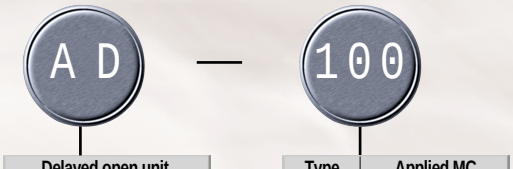
Type	No. of contact	Mounting	Applied MC
2	2 Contacts	Top	GMC-9~85
4	4 Contacts		
2	2 Contacts	Side	
100	2 Contacts	Side	GMC-100~800

Mechanical Interlock unit

Interlock Unit

Type	Applied MC
9	GMC-9~85
100	GMC-100~150
180	GMC-180~400

Delayed open unit



Delayed open unit

Type	Applied MC
9	GMD-9~40
50	GMD-50~85
100	GMC-100~220
300	GMC-300~400
600	GMC-600~800

Mechanical Latch unit

Latch unit

Type	Applied MC
9	GMC-9~40
50	GMC-50~85
100	GMC-100~125
150	GMC-150
220	GMC-180~220
400	GMC-300~400

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Types and specifications

Type				GMC-9	GMC-12	GMC-18	GMC-22	GMC-32	GMC-40	GMC-50	GMC-65	GMC-75	GMC-85
IEC-60947	AC1 duty			20A	20A	25A	32A	50A	60A	80A	100A	110A	135A
	AC3 duty		200~240V	2.5kW 11A	3.5kW 13A	4.5kW 18A	5.5kW 22A	7.5kW 32A	11kW 40A	15kW 55A	18.5kW 65A	22kW 75A	25kW 85A
			380~440V	4kW 9A	5.5kW 12A	7.5kW 18A	11kW 22A	15kW 32A	18.5kW40A	22kW 50A	30kW 65A	37kW 75A	45kW 85A
			500~550V	4kW 7A	7.5kW 12A	7.5kW 13A	15kW 22A	18.5kW 28A	22kW 32A	30kW 43A	37kW 60A	45kW 64A	45kW 75A
			690V	4kW 5A	7.5kW 9A	7.5kW 9A	15kW 18A	18.5kW 21A	22kW 25A	30kW 33A	37kW 47A	45kW 47A	45kW 52A
UL	Continuous current(Ith)			20A	25A	30A	32A	45A	50A	70A	80A	90A	100A
	AC Motor	single phase	115V	0.5 HP	0.5 HP	1 HP	2 HP	2 HP	3 HP	3 HP	5 HP	5 HP	7.5 HP
			230V	1 HP	2 HP	3 HP	3 HP	5 HP	5 HP	7.5 HP	10 HP	15 HP	15 HP
		Three phase	200V	2 HP	3 HP	5 HP	7 HP	7.5 HP	10 HP	10 HP	15 HP	20 HP	25 HP
			230V	2 HP	3 HP	5 HP	7.5 HP	10 HP	10 HP	15 HP	20 HP	25 HP	30 HP
			460V	5 HP	7.5 HP	10 HP	10 HP	20 HP	25 HP	30HP	40 HP	50 HP	50 HP
			575V	7.5 HP	10 HP	15 HP	15 HP	20 HP	25 HP	30 HP	40 HP	50 HP	50 HP
Life time			Electrical	250	250	250	250	200	200	200	200	200	200
(unit: 10,000 time)			Mechanical	2500	2500	2500	2500	1500	1500	1000	1000	1000	1000
Aux. contact			Standard	1NO 1NC	1NO 1NC	1NO 1NC	1NO 1NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC
			Side mounting	AU-1	AU-1	AU-1	AU-1	AU-1	AU-1	AU-1	AU-1	AU-1	AU-1
			Top mounting	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4	AU-2, AU-4
Panel installation				Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw	Rail & Screw
External Dimension(mm) (W×H ×D)				44x80x86.8	44x80x86.8	44x80x86.8	44x80x86.8	68x82x94.6	68x82x94.6	94x123.5x117.4	94x123.5x117.4	94x123.5x117.4	94x123.5x117.4
Mounting Dimension(mm)	(Width ×Height)			30~35x48~59 35x60	30~35x48~59 35x60	30~35x48~59 35x60	30~35x48~59 35x60	30~35x48~59 35x60	30~35x48~59 35x60	100x50~60 100x60	100x50~60 100x60	100x50~60 100x60	100x50~60 100x60
Application	Contactors	DC Coil		GMD-9	GMD-12	GMD-18	GMD-22	GMD-32	GMD-40	GMD-50	GMD-65	GMD-75	GMD-85
		Reversing		GMC-9R	GMC-12R	GMC-18R	GMC-22R	GMC-32R	GMC-40R	GMC-50R	GMC-65R	GMC-75R	GMC-85R
		Latching		GMC-9L	GMC-12L	GMC-18RL	GMC-22L	GMC-32L	GMC-40RL	GMC-50L	GMC-65L	GMC-75L	GMC-85L
	Switches	Standard		GMS-9	GMS-12	GMS-18	GMS-22	GMS-32	GMS-40	GMS-50	GMS-65	GMS-75	GMS-85
		Reversing		GMS-9R	GMS-12R	GMS-18R	GMS-22R	GMS-32R	GMS-40R	GMS-50R	GMS-65R	GMS-75R	GMS-85R
		Differential		GMS-9K	GMS-12K	GMS-18K	GMS-22K	GMS-32K	GMS-40K	GMS-50K	GMS-65K	GMS-75K	GMS-85K
		Enclosed	(Metal)	GMW-9	GMW-12	GMW-18	GMW-22	GMW-32	GMW-40	GMW-50	GMW-65	GMW-75	GMW-85
			(Plastic)	GMW-9M	GMW-12M	GMW-18M	GMW-22M	-	-	-	-	-	-
		Push button	(Metal)	GMW-9B	GMW-12B	GMW-18B	GMW-22B	GMW-32B	GMW-40B	GMW-50B	GMW-65B	GMW-75B	GMW-85B
			(Plastic)	GMW-9MB	GMW-12MB	GMW-18MB	GMW-22MB	-	-	-	-	-	-
Thermal Overload Relays		Standard		GTH-22	GTH-22	GTH-22	GTH-22	GTH-40	GTH-40	GTH-85	GTH-85	GTH-85	GTH-85
		Differential		GTK-22	GTK-22	GTK-22	GTK-22	GTK-40	GTK-40	GTK-85	GTK-85	GTK-85	GTK-85
		3 heaters		GTH-22/3	GTH-22/3	GTH-22/3	GTH-22/3	GTH-40/3	GTH-40/3	GTH-85/3	GTH-85/3	GTH-85/3	GTH-85/3
		Delayed open		GTH-22/L	GTH-22/L	GTH-22/L	GTH-22/L	GTH-40/L	GTH-40/L	GTH-85/L	GTH-85/L	GTH-85/L	GTH-85/L
		Separate mounting		GTH-22H	GTH-22H	GTH-22H	GTH-22H	GTH-40H	GTH-40H	GTH-85H	GTH-85H	GTH-85H	GTH-85H

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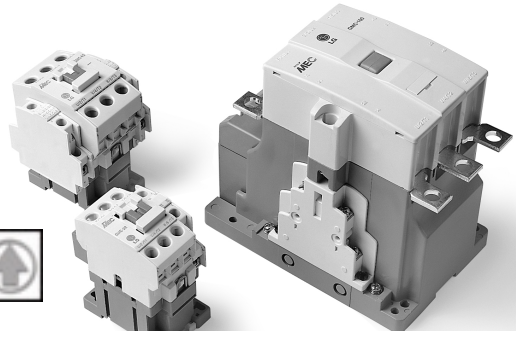
Type				GMC-100	GMC-125	GMC-150	GMC-180	GMC-220	GMC-300	GMC-400	GMC-600	GMC-800
IEC-60947	AC1 duty			150A	150A	200A	230A	260A	350A	420A	660A	800A
	AC3 duty		200~240V	30kW 105A	37kW 125A	45kW 150A	55kW 180A	75kW 250A	90kW 300A	125kW 400A	190kW 630A	220kW 800A
			380~440V	55kW 105A	60kW 120A	75kW 150A	90kW 180A	132kW 250A	160kW 300A	220kW 400A	330kW 630A	440kW 800A
			500~550V	55kW 85A	60kW 90A	90kW 140A	110kW 180A	132kW 200A	160kW 250A	225kW 350A	330kW 500A	500kW 720A
			690V	55kW 65A	60kW 70A	90kW 100A	110kW 120A	132kW 150A	200kW 220A	250kW 300A	330kW 420A	500kW 630A
UL	Continuous current(Ith)			160A	160A	210A	230A	275A	350A	450A	660A	840A
	AC Motor	single phase	115V	7.5HP	10HP	15HP	15HP	15HP				
			230V	15HP	20HP	25HP	30HP	40HP				
		Three phase	200V	30HP	40HP	40HP	60HP	60HP	100HP	125HP	150HP	200HP
			230V	30HP	40HP	50HP	60HP	75HP	100HP	150HP	200HP	250HP
			460V	60HP	75HP	100HP	125HP	150HP	200HP	300HP	400HP	500 HP
			575V	60HP	75HP	100HP	125HP	150HP	200HP	300HP	400HP	500HP
Life time			Electrical	100	100	100	100	100	100	50	50	50
(unit: 10,000 time)			Mechanical	500	500	500	500	500	500	500	500	500
Aux. contact			Standard	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC
			Side mounting	AU-100	AU-100	AU-100	AU-100	AU-100	AU-100	AU-100	AU-100	AU-100
			Top mounting	-	-	-	-	-	-	-	-	-
Panel installation				Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw
External Dimension(mm) (W ×H ×D)				100x157.4x146.5	100x157.4x146.5	120x166x157	138x203x181	138x203x181	163x243x198	163x243x198	285x290x242	285x290x242
Mounting Dimension(mm)	(Width ×Height)			80x110 90x125	80x100 90x125	100x125~130	45x190 120x190	45x190 120x190	50x210 60x220 145x225	50x210 60x220 145x225	250x250	250x250
Application	Contactors	DC Coil		AC / DC common coil								
		Reversing		GMC-100R	GMC-125R	GMC-150R	GMC-180R	GMC-220R	GMC-300R	GMC-400R	-	-
		Latching		GMC-100L	GMC-125L	GMC-150L	GMC-180L	GMC-220L	GMC-300RL	GMC-400L	-	-
	Switches	Standard		GMS-100	GMS-125	GMS-150	GMS-180	GMS-220	GMS-300	GMS-400	GMS-600	GMS-800
		Reversing		GMS-100R	GMS-125R	GMS-150R	GMS-180R	GMS-220R	GMS-300R	GMS-400R	-	-
		Differential		GMS-100K	GMS-125K	GMS-150K	GMS-180K	GMS-220K	GMS-300K	GMS-400K	GMS-600K	GMS-800K
		Enclosed	(Metal)	GMW-100	GMW-125	GMW-150	GMW-180	GMW-220	-	-	-	-
			(Plastic)	-	-	-	-	-	-	-	-	-
		Push button	(Metal)	-	-	-	-	-	-	-	-	-
			(Plastic)	-	-	-	-	-	-	-	-	-
Thermal Overload Relays		Standard		GTH-100	GTH-100	GTH-150	GTH-220	GTH-220	GTH-400	GTH-400	GTH-600	GTH-600
		Differential		GTK-100	GTK-100	GTK-150	GTK-220	GTK-220	GTK-400	GTK-400	GTK-600	GTK-600
		3 heaters		GTH-100/3	GTH-100/3	GTH-150/3	GTH-220/3	GTH-220/3	GTH-400/3	GTH-400/3	GTH-600/3	GTH-600/3
		Delayed open		GTH-100/L	GTH-100/L	GTH-150/L	GTH-220/L	GTH-220/L	GTH-400/L	GTH-400/L	GTH-600/L	GTH-600/L
		Separate mounting		-	-	-	GTH-220H	GTH-220H	GTH-400H	GTH-400H	GTH-600H	GTH-600H



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Standard type Magnetic Contactors and Switches

Ratings of Magnetic Contactors and Switches

(Table 1)

Type		Rating																AC1 duty (Ith)
Magnetic contactors	Magnetic Switches	AC3 duty						AC2 duty						AC4 duty				
		200~220V		380~440V		500~550V		200~220V		380~440V		500~550V		200~220V		380~440V		
		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	A
GMC - 9	GMS - 9	2.5	11	4	9	4	7	2.5	11	4	9	4	7	1.5	8	2.2	6	20
GMC - 12	GMS - 12	3.5	13	5.5	12	7.5	12	3.5	13	5.5	12	7.5	12	2.2	11	4	9	20
GMC - 18	GMS - 18	4.5	18	7.5	18	7.5	13	4.5	18	7.5	18	7.5	13	3.7	18	4	9	25
GMC - 22	GMS - 22	5.5	22	11	22	15	22	5.5	22	11	22	15	22	3.7	18	5.5	13	32
GMC - 32	GMS - 32	7.5	32	15	32	18.5	28	7.5	32	15	32	18.5	28	4.5	20	7.5	17	50
GMC - 40	GMS - 40	11	40	18.5	40	22	32	11	40	18.5	40	22	32	5.5	25	11	24	60
GMC - 50	GMS - 50	15	55	22	50	30	43	15	55	22	50	30	43	7.5	35	15	32	80
GMC - 65	GMS - 65	18.5	65	30	65	37	60	18.5	65	30	65	37	60	11	50	22	47	100
GMC - 75	GMS - 75	22	75	37	75	45	64	22	75	37	75	45	64	13	55	25	52	110
GMC - 85	GMS - 85	25	85	45	85	45	75	25	85	45	85	45	75	15	65	30	62	135
GMC - 100	GMS - 100	30	105	55	105	55	85	30	105	55	105	55	85	19	80	37	75	150
GMC - 125	GMS - 125	37	125	60	120	60	90	37	125	60	120	60	90	22	93	45	90	150
GMC - 150	GMS - 150	45	150	75	150	90	140	45	150	75	150	90	140	30	125	55	110	200
GMC - 180	GMS - 180	55	180	90	180	110	180	55	180	90	180	110	180	37	150	75	150	230
GMC - 220	GMS - 220	75	220	132	220	132	200	75	220	132	220	132	200	45	180	90	180	260
GMC - 300	GMS - 300	90	300	160	300	160	250	90	300	160	300	160	250	55	220	110	220	350
GMC - 400	GMS - 400	125	400	220	400	225	350	125	400	220	400	225	350	75	300	150	300	420
GMC - 600	GMS - 600	190	630	330	630	330	500	190	630	330	630	330	500	110	400	200	400	660
GMC - 800	GMS - 800	220	800	440	800	500	720	220	800	440	800	500	720	160	630	300	630	800

Ratings of Auxiliary contacts

(Table 2)

Type	Rated current (A)																AC1 duty (Ith)
	AC 15 duty				DC 13 duty				AC 12 duty				DC 12 duty				
	110V	220V	440V	550V	24V	48V	110V	220V	110V	220V	440V	550V	24V	48V	110V	220V	A
GMC(D)-9~22	6	3	1.5	1.2	3	1.5	0.55	0.27	10	8	5	5	5	3	2.5	1	16
GMC(D)-32~85	6	3	1.5	1.2	3	1.5	0.55	0.27	10	8	5	5	5	3	2.5	1	16
GMC-100~800	6	5	3	3	6	3	1.2	0.2	10	10	5	5	5	3	1.5	0.25	16

No. of Contact

(Table 3)

Type	Standard	Option
GMC(D)-9~22	1NO 1NC	4NO, 3NO1NC, 2NO2NC, 1NO3NC
GMC(D)-32~85	2NO 2NC	4NO, 3NO1NC, 2NO2NC, 1NO3NC
GMC-100~800	2NO 2NC	2NO 2NC

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Ratings of the operational coil

Low AF

Type	AC coil		DC coil
	AC60Hz	AC 50Hz	DC
GMC(D) - 9 ~ 85	24V	24V	12V
	48V	42V	24V
	110V	48V	48V
	120V	100V	100V
	208V	110V	110V
	220V	220V	125V
	240V	240V	200V
	277V	380V	220V
	380V	400V	250V
	440V	415V	-
	480V	440V	-
	600V	500V	-
	-	550V	-

High AF

(Table 4)

Type	Norminal voltage	AC / DC common coil	
		AC 50Hz/60Hz	DC
GMC - 100 ~ 400	24V Note1)	24~25V	24V
	48V Note1)	48~50V	48V
	100~200V	100~240V	100~220V
	300V	265~347V	-
	400V	380~450V	-
	500V	440~575V	-
GMC - 600 ~ 800	100V	100~127V	100~110V
	200V	200~240V	200~220V
	300V	265~347V	-
	400V	380~450V	-
	500V	440~575V	

Note) 1. The Norminal voltage of 24, 48V are available in GMC-100~220

Ranges of the coil voltage

- When it is saturated after apply the rated voltage and rated frequency at 40 ℃, the coil operate at 85~110% of the rated voltage.
- When the coil is operated below or over the variable ranges it is apt to be deteriorated in electrical insulation and mechanical operation.

Selections of coil

In GMC-9~85 contactors, 50Hz coil and 60Hz coil are separated.
But in GMC-100~800 contactors, the coils are AC/DC common use. (under DC 220V)

Characteristics of the AC coil

AC 220 V, 60 Hz (50Hz) basis

(Table 5)

Type	Coil consumption [VA]		Heat dissipation [W]	Operational voltage [V]		Coil current [mA]	Operational time (ms)	
	Inrush	Sealed		Pick-up voltage	Droup-out voltage		Closing	Opening
GMC - 9, 12, 18, 22	95	9	2	141~156(142~157)	105~125(112~132)	41(36)	10~17	6~9
GMC - 32, 40	95	9	2	150~165(151~166)	110~130(117~137)	41(36)	11~19	6~10
GMC - 50, 65, 75, 85	220	17	5	145~160(146~161)	100~120(107~127)	77(68)	16~25	8~15
GMC - 100, 125	298	12.3	4.4	77	48	56	30~34	63~67
GMC - 150	298	12.3	4.4	77	48	56	37~41	47~52
GMC - 180, 220	380	11.6	4.7	77	48	53	45	45
GMC - 300, 400	571	14	5	77	48	64	45~50	48~52
GMC - 600, 800	1000	29	7.8	150	91	132	66~69	55

Note) 1. The aboves are the average values. 2. ( ) are the values for 50Hz.

AC 110 V, 60 Hz (50Hz)basis

Type	Coil consumption [VA]		Heat dissipation [W]	Operational voltage [V]		Coil current [mA]	Operational time (ms)	
	Inrush	Sealed		Pick-up voltage	Droup-out voltage		Closing	Opening
GMC - 9, 12, 18, 22	95	8	2	75~85(74~84)	55~65(54~64)	73(73)	11~18	6~9
GMC - 32, 40	95	8	2	75~85(74~84)	55~65(54~64)	73(73)	13~20	6~9
GMC - 50, 65, 75, 85	220	17	5.5	68~78(67~77)	40~50(39~49)	154(154)	16~25	9~16
GMC - 100, 125	162	9.8	3.1	77	48	89	46~50	49~53
GMC - 150	162	12.2	3	77	48	111	56~60	44~48
GMC - 180, 220	220	9.1	3.4	77	48	83	60	41
GMC - 300, 400	393	14	4.4	77	48	128	64~68	43~47
GMC - 600, 800	1000	17	6.3	77	48	155	66~70	45~49

Note) 1. The aboves are the average values. 2. ( ) are the values for 50Hz.

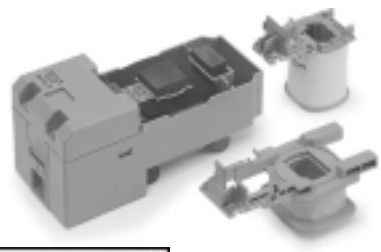
Characteristics of the DC coil

DC 110 V basis

(Table 6)

Type	Coil consumption [VA]		Time contant [ms]	Operational voltage [V]		Coil current [mA]	Operational time (ms)	
	Inrush	Sealed		Pick-up voltage	Droup-out voltage		Closing	Opening
GMD - 9, 12, 18, 22	9	9	50	60~75	15~35	82	45~55	8~15
GMD - 32, 40	9	9	50	60~75	15~35	82	45~55	8~15
GMD - 50, 65, 75, 85	220	5	-	65~80	15~35	46	20~30	13~20

Note) 1. The aboves are the average values.



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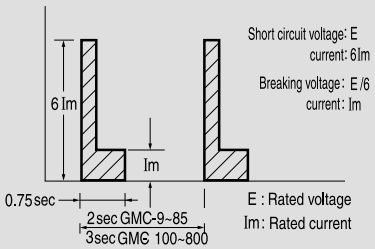
Standard type Magnetic Contactors

Performance of the Magnetic Contactors

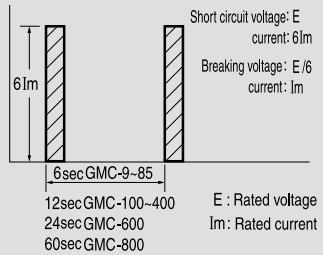
(Table 7)

Type	Rated voltage (V)	Rated current (A)	Short. Breaking current (A)		Operating cycles per hour(AC3 duty)	Lifetime(unit:10,000 time)		Perpormance Indicate
			Short cicuit	Breaking		Mechanical	Electrical	
GMC - 9	220	11	132	110	1800	2500	250	AC3 · 1 · 0-0
	440	9	108	90				
GMC - 12	220	13	156	130	1800	2500	250	AC3 · 1 · 0-0
	440	12	144	120				
GMC - 18	220	18	216	180	1800	2500	250	AC3 · 1 · 0-0
	440	18	216	180				
GMC - 22	220	22	264	220	1800	2500	250	AC3 · 1 · 0-0
	440	22	264	220				
GMC - 32	220	32	385	320	1800	1500	200	AC3 · 1 · 0-0
	440	32	385	320				
GMC - 40	220	40	480	400	1800	1500	200	AC3 · 1 · 0-0
	440	40	480	400				
GMC - 50	220	55	660	550	1200	1000	200	AC3 · 1 · 0-0
	440	50	600	500				
GMC - 65	220	65	780	650	1200	1000	200	AC3 · 1 · 0-0
	440	65	780	650				
GMC - 75	220	75	900	750	1200	1000	200	AC3 · 1 · 0-0
	440	75	900	750				
GMC - 85	220	80	960	800	1200	1000	200	AC3 · 1 · 0-0
	440	80	960	800				
GMC - 100	220	105	1050	1050	1200	500	100	AC3 · 1 · 1-0
	440	105	1050	1050				
GMC - 125	220	125	1250	1250	1200	500	100	AC3 · 1 · 1-0
	440	120	1200	1200				
GMC - 150	440	150	1500	1500	1200	500	100	AC3 · 1 · 1-0
	440	150	1500	1500				
GMC - 180	220	180	1800	1800	1200	500	100	AC3 · 1 · 1-0
	440	180	1800	1800				
GMC - 220	220	220	2200	2200	1200	500	100	AC3 · 1 · 1-0
	440	220	2200	2200				
GMC - 300	220	300	3000	3000	1200	500	100	AC3 · 1 · 1-0
	440	300	3000	3000				
GMC - 400	220	400	4000	4000	1200	500	50	AC3 · 1 · 1-1
	440	400	4000	4000				
GMC - 600	220	630	6300	6300	1200	500	50	AC3 · 1 · 1-1
	440	630	6300	6300				
GMC - 800	220	800	8000	8000	1200	500	50	AC3 · 1 · 1-1
	440	800	8000	8000				

Test duty of the electrical lifetime (AC3 duty)



Test duty of the electrical lifetime (AC4 duty)



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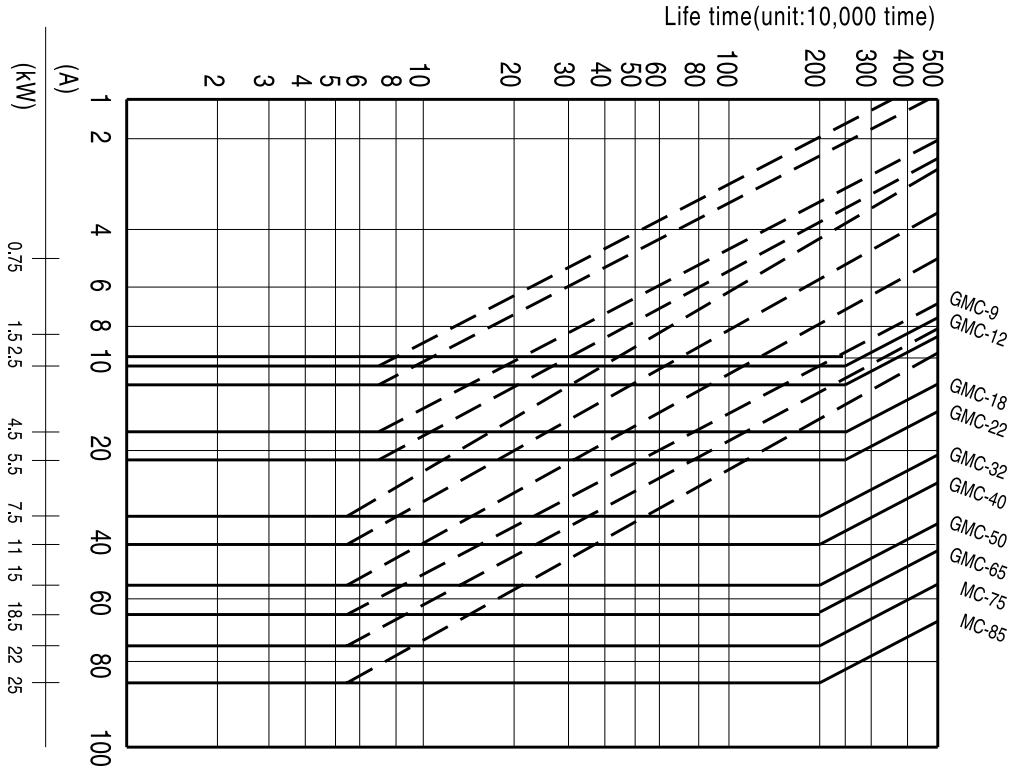
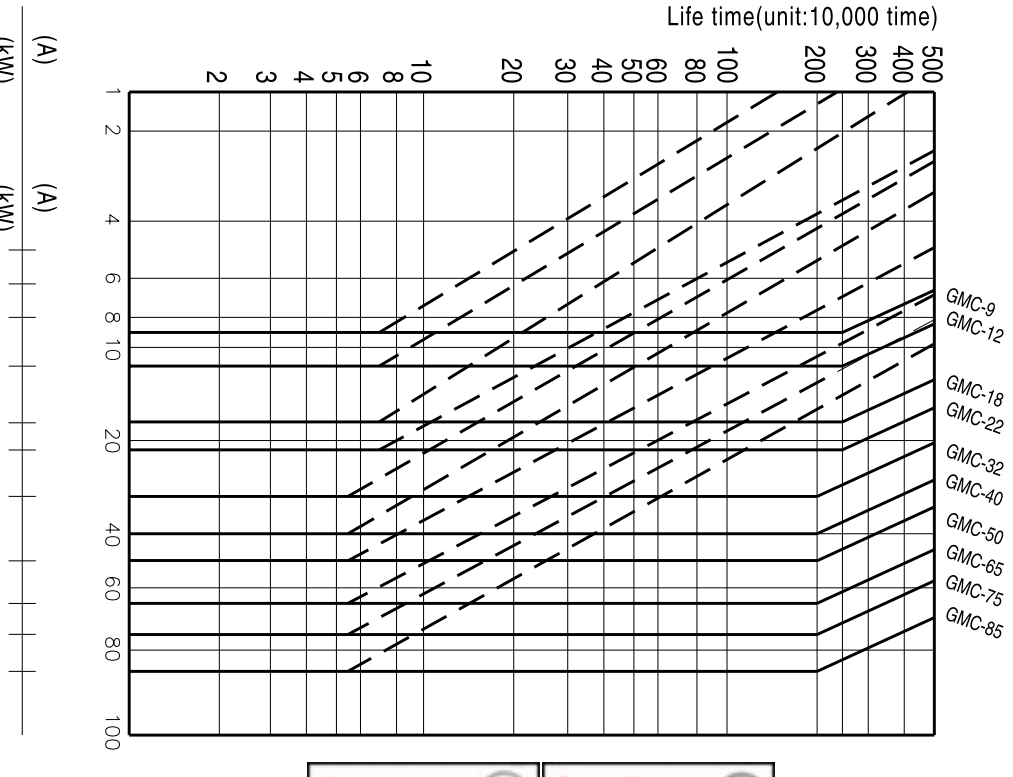
The electrical lifetime (GMC-9~85)





AC3 duty (standard)

AC 4 duty (Inching, reverse phase breaking duty)

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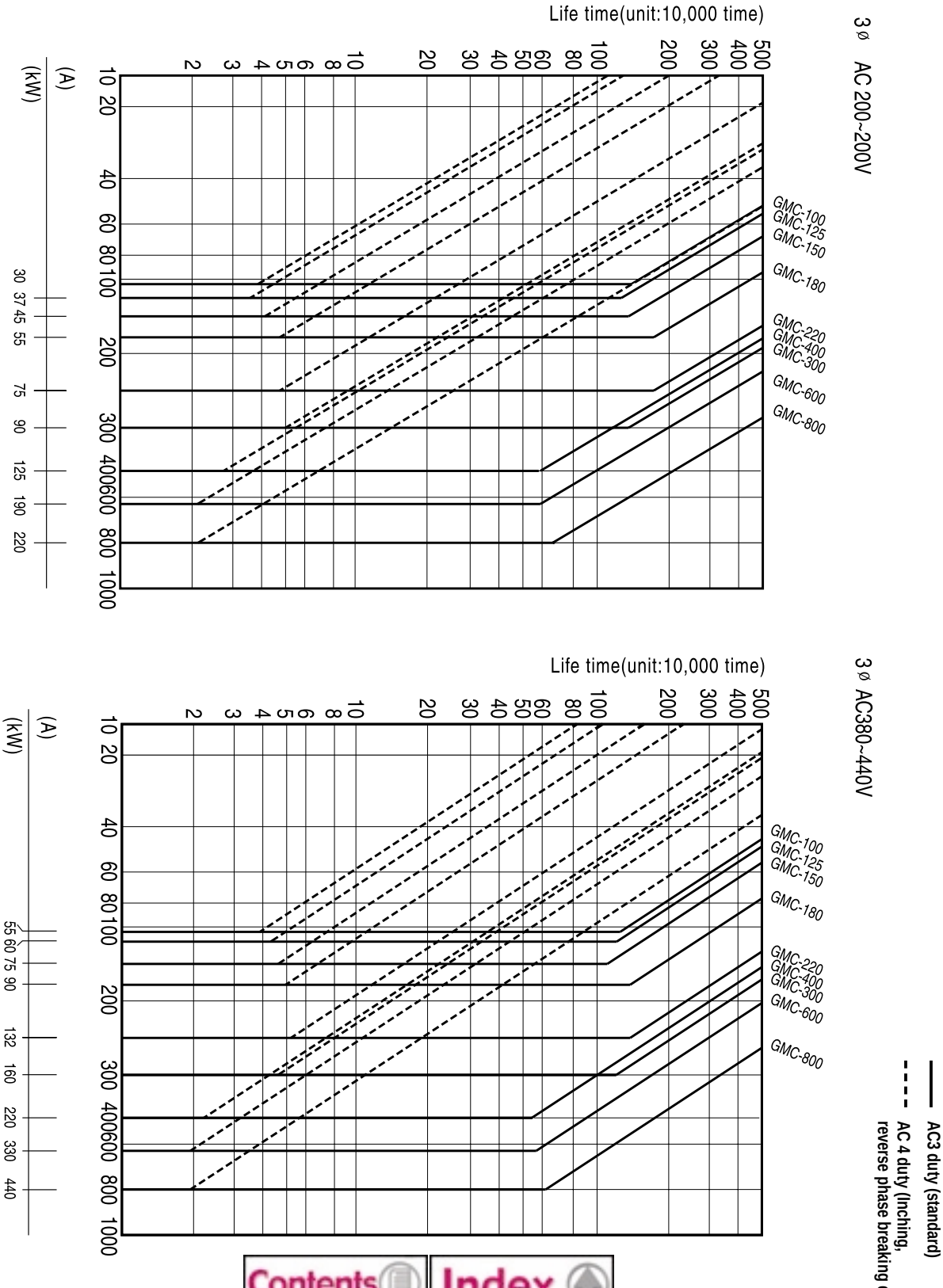
The electrical lifetime (GMC-100~800)



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Applied wires and screw torque

Main circuit

(Table 8)

Type	Screw		Diameter of Wire [mm²]		IEC type terminal [mm²]		Tightening Torque [lb·in]	
	Source side (MC)	Load side (TOR)	Source side (MC)	Load side (TOR)	Source side (MC)	Load side (TOR)	Source side (MC)	Load side (TOR)
GMC - 9	M4	M4	1.25~5.5	1.25~5.5 (ø1.6~2.6)	1.25-4~5.5-4 (ø1.6~2.6)	1.25-4~5.5-4	20	20
GMC - 12	M4	M4	1.25~5.5	1.25~5.5 (ø1.6~2.6)	1.25-4~5.5-4 (ø1.6~2.6)	1.25-4~5.5-4	20	20
GMC - 18	M4	M4	1.25~5.5	1.25~5.5 (ø1.6~2.6)	1.25-4~5.5-4 (ø1.6~2.6)	1.25-4~5.5-4	35	35
GMC - 22	M4	M4	1.25~5.5	1.25~5.5 (ø1.6~2.6)	1.25-4~5.5-4 (ø1.6~2.6)	1.25-4~5.5-4	35	35
GMC - 32	M5	M5	2~14	2~14 (ø1.6~3.6)	1.25-5~14-5 (ø1.6~3.6)	1.25-5~14-5	35	35
GMC - 40	M5	M5	2~14	2~14 (ø1.6~3.6)	1.25-5~14-5 (ø1.6~3.6)	1.25-5~14-5	35	35
GMC - 50	M6	M6	2~22	2~22	1.25-6~22-6	1.25-6~22-6	40	40
GMC - 65	M8	M8	2~38	2~38	1.25-6~60-6	1.25-6~60.6	40	40
GMC - 75	M8	M8	2~38	2~38	1.25-6~60-6	1.25-6~60-6	40	40
GMC - 85	M8	M8	2~38	2~38	1.25-6~60-6	1.25-6~60-6	40	40
GMC - 100	M8	M8	2~60	2~60	2-8~60-8	2-8~60-8	80	100
GMC - 125	M8	M8	2~60	2~60	2-8~60-8	2-8~60-8	80	100
GMC - 150	M8	M8	2~100	2~100	2-8~100-8	2-8~100-8	80	100
GMC - 180	M10	M10	2~150	2~150	2-10~150-10	2-10~150-10	130	150
GMC - 220	M10	M10	2~150	2~150	2-10~150-10	2-10~150-10	130	150
GMC - 300	M12	M12	2~200	2~200	2-12~200-12	2-12~200-12	200	250
GMC - 400	M12	M12	2~20	2~200	2-12~200-12	2-12~200-12	200	250
GMC - 600	M16	M16	80~325	80~325	80-16~325-16	80-16~325-16	500	600
GMC - 800	M16	M16	80~325	80~325	80-16~325-16	80-16~325-16	500	600

Operating circuit

(Table 9)

Type	Screw		Diameter of Wire [mm²]		IEC type terminal [mm²]		Tightening Torque [lb·in]	
	Source side (MC)	Load side (TOR)	Source side (MC)	Load side (TOR)	Source side (MC)	Load side (TOR)	Source side (MC)	Load side (TOR)
GMC - 9~85	M3.5	M3.5	1.25~2 (ø1.6)	1.25~2 (ø1.6)	1.25-3.5~2-3.5	1.25-3.5~2-3.5	10	10
GMC - 100~800	M4	M4	1.25~5.5 (ø1.2~2.6)	1.25~5.5 (ø1.2~2.6)	1.25-4~5.5-4	1.25-4~5.5-4	12	12

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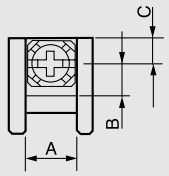
Standard type Magnetic Contactors

Terminal dimensions

(Table 10)

Type	Dimensions of terminal				Type	Dimensions of terminal			
	Main circuit		Aux. circuit			Main circuit		Aux. circuit	
	Screw	Dimensions of terminal A ×B ×C (mm)	Screw	Dimensions of terminal A ×B ×C (mm)		Screw	Dimensions of terminal A ×B ×C(mm)	Screw	Dimensions of terminal A ×B ×C(mm)
GMC - 9	M4	9.5 ×5 ×4.9	M3.5	8 ×5 ×4.9	GTH-22	M4	10 ×6.5 ×5	M3.5	7.8 ×4.3 ×7.3
GMC - 12	M4	9.5 ×5 ×4.9	M3.5	8 ×5 ×4.9					
GMC - 18	M4	9.5 ×5 ×4.9	M3.5	8 ×5 ×4.9					
GMC - 22	M4	9.5 ×5 ×4.9	M3.5	8 ×5 ×4.9					
GMC - 32	M5	12.4 ×6.5 ×6	M3.5	8 ×5 ×4.9	GTH-40	M5	12.4 ×6.2 ×6.3	M3.5	7.8 ×4.3 ×7.3
GMC - 40	M5	12.4 ×6.5 ×6	M3.5	8 ×5 ×4.9					
GMC - 50	M6	17.5 ×7 ×8.7	M3.5	8 ×5 ×4.9	GTH-85	M6	19 ×8.5 ×9	M3.5	7.8 ×4.3 ×7.3
GMC - 65	M8	17.5 ×7 ×8.7	M3.5	8 ×5 ×4.9					
GMC - 75	M8	17.5 ×7 ×8.7	M3.5	8 ×5 ×4.9		M8	19 ×8.5 ×9	M3.5	7.8 ×4.3 ×7.3
GMC - 85	M8	17.5 ×7 ×8.7	M3.5	8 ×5 ×4.9					
GMC - 100	M8	15 ×8.5 ×9.5	M4	10.8 ×4.1 ×4.1	GTH-100	M8	15 ×9.5 ×9	M4	8.2 ×4.1 ×5.2
GMC - 125	M8	15 ×8.5 ×9.5	M4	10.8 ×4.1 ×4.1					
GMC - 150	M8	20.5 ×10 ×9	M4	10.8 ×4.1 ×4.1	GTH-150	M8	20 ×10 ×10	M4	8.2 ×4.1 ×5.2
GMC - 180	M10	25 ×12.5 ×15	M4	10.8 ×4.1 ×4.1	GTH-220	M10	25 ×12.5 ×13.5	M3.5	7.7 ×5 ×4.5
GMC - 220	M10	25 ×12.5 ×15	M4	10.8 ×4.1 ×4.1					
GMC - 300	M12	30 ×14.5 ×20	M4	10.8 ×4.1 ×4.1	GTH-400	M12	30 ×15 ×11	M3.5	7.7 ×5 ×4.5
GMC - 400	M12	30 ×14.5 ×20	M4	10.8 ×4.1 ×4.1					
GMC - 600	M16	40 ×20 ×40.5	M4	10.8 ×4.1 ×4.1	GTH-600	M16	30 ×11.2 ×23.2	M3.5	7.7 ×5 ×4.5
GMC - 800	M16	40 ×20 ×40.5	M4	10.8 ×4.1 ×4.1					

Detailed terminal dimension

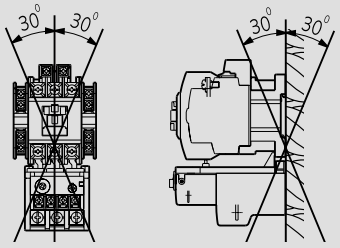


(Pig.3)

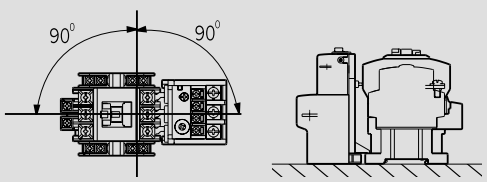
Installation and environment

Installation

1)Operating position



pig.4)Normal installtion



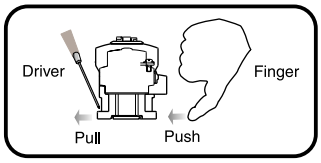
pig.5)Horizontal or Vertical installation

∗ In special installation, the lifetime and other characteristics may be deteriorated

2) Din-rail(GMC-9~85,GTK-22H~85H)

• 35mm Din-rail

Install



Un- install

Environment

1) Ambient temperature
   • Standard 20 ℃(-25~40 ℃)
2) Storage temperature
   • -30~65 ℃
3) Altitude : below 2,000m
4) No freezing site

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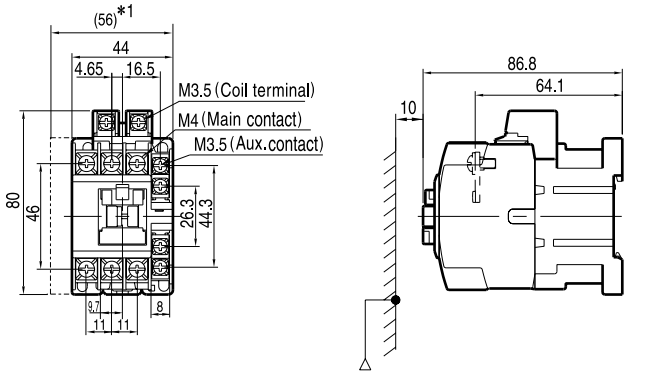
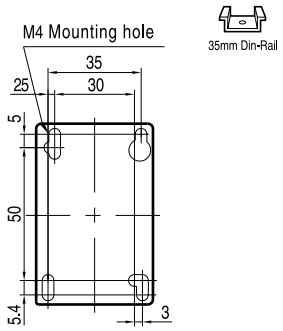
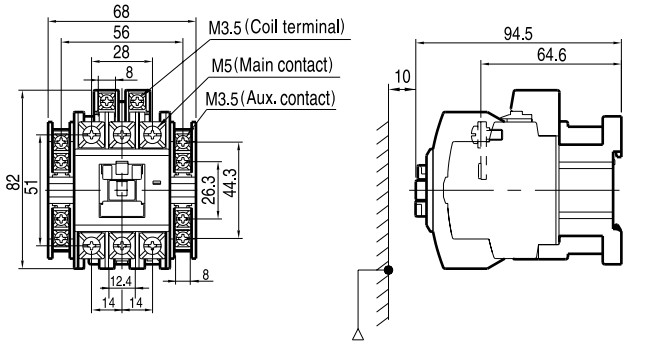
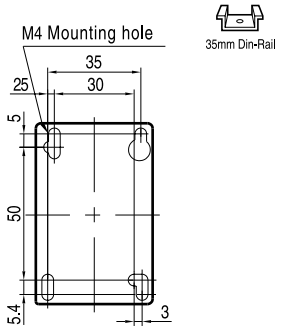
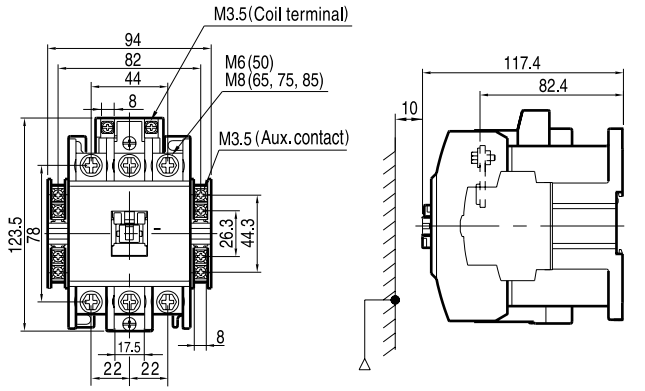
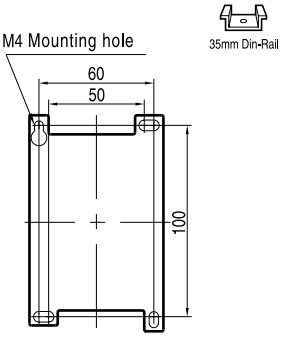
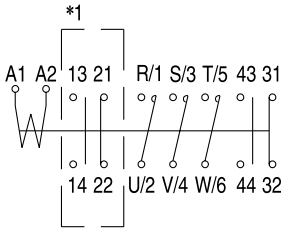
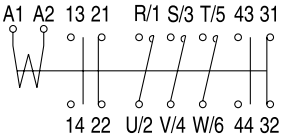
External / Mounting dimension(GMC-9~85)

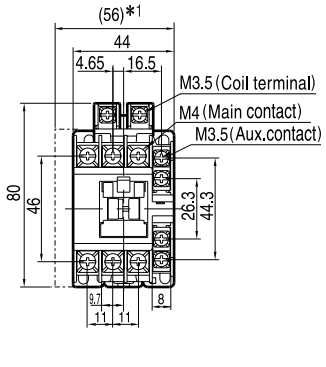
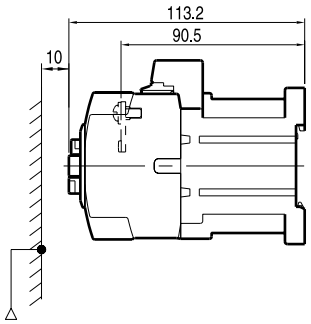
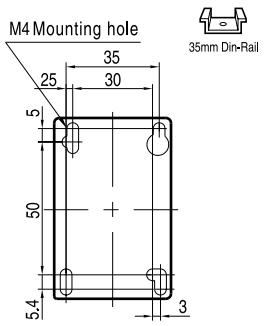
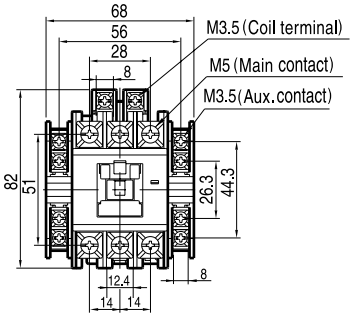
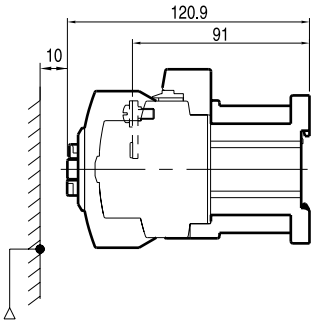
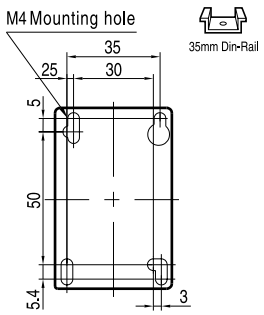
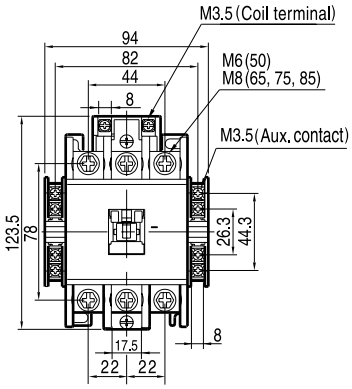
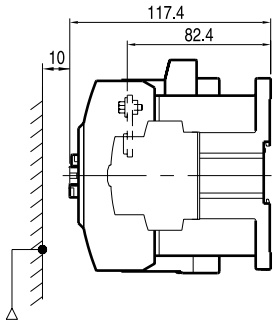
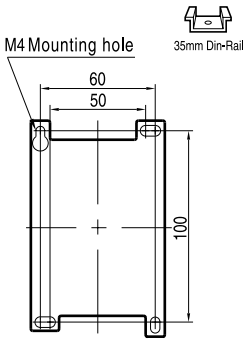
Type	External dimensions	Mounting dimensions
GMC - 9 GMC - 12 GMC - 18 GMC - 22		 GMC-9,12 : 0.33kg GMC-18,22 : 0.37kg
GMC - 32 GMC - 40		 0.45kg
GMC - 50 GMC - 65 GMC - 75 GMC - 85		 1kg

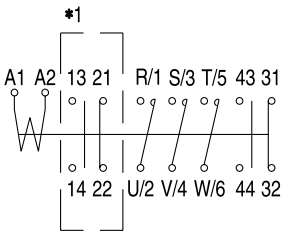
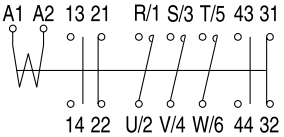
	GMC - 9 ~ 22	GMC - 32 ~ 85
Circuit diagram		

Note) *1attach Aux. contacts 2NO 2NC

Standard type Magnetic Contactors

External / Mounting dimension (GMD-9~85)

Type	External dimensions	Mounting dimensions
GMD - 9 GMD - 12 GMD - 18 GMD - 22	 	 GMD-9,12 : 0.55kg GMD-18,22 : 0.59kg
GMD - 32 GMD - 40	 	 0.67kg
GMD - 50 GMD - 65 GMD - 75 GMD - 85	 	 1.06kg

	GMD - 9 ~ 22	GMD - 32 ~ 85
Circuit diagram		

Note) *1 attach Aux. contacts 2NO 2NC

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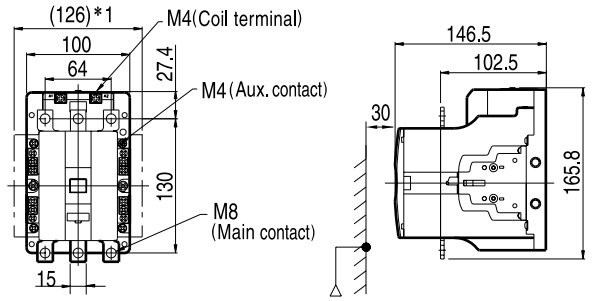
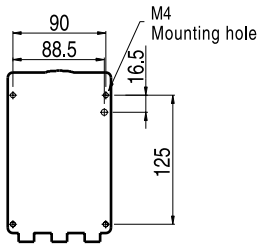
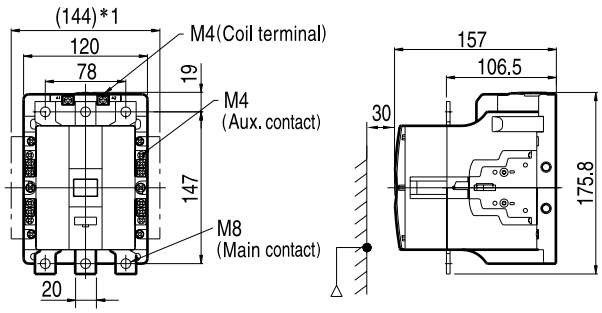
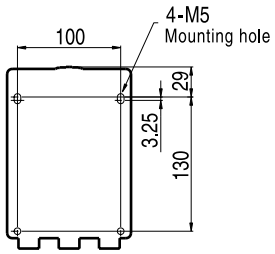
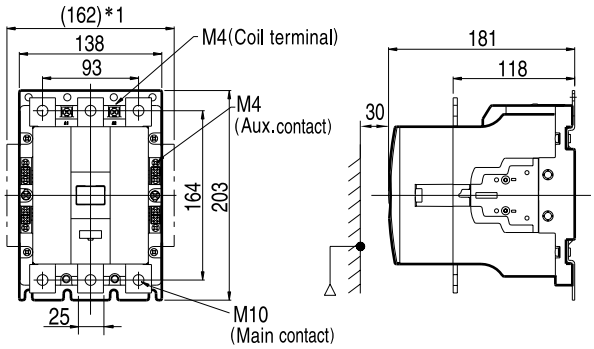
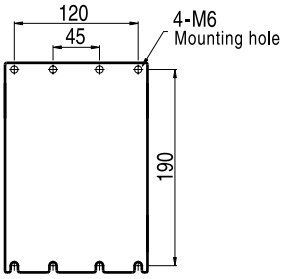
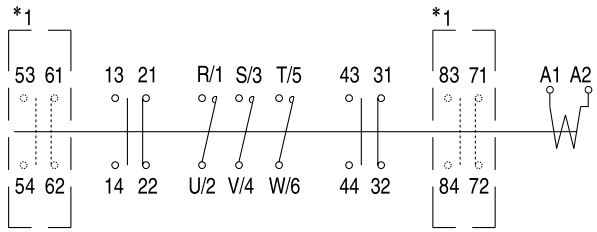
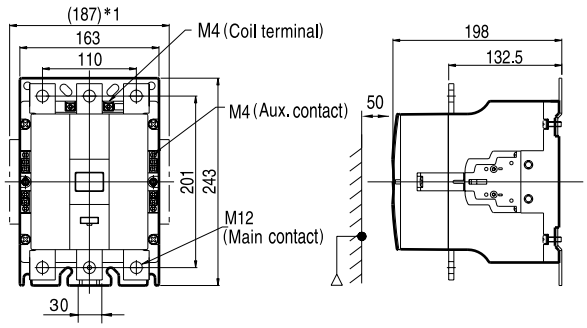
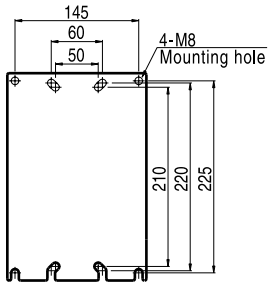
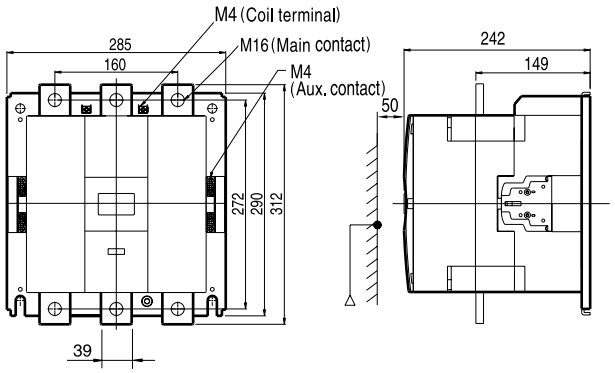
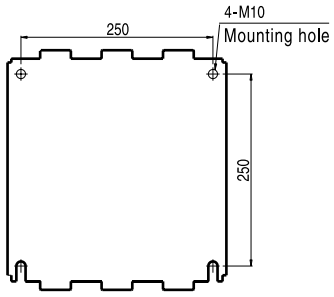
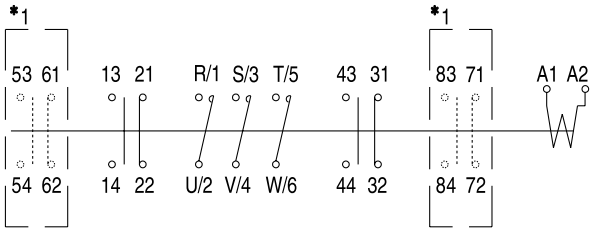
External / Mounting dimension (GMC-100~220)

Type	External dimensions	Mounting dimensions
GMC - 100 **GMC - 125**		 **2.9kg**
GMC - 150		 **3.4kg**
GMC - 180 **GMC - 220**		 **5.4kg**
Circuit diagram	**GMC - 100 ~ 220** 	

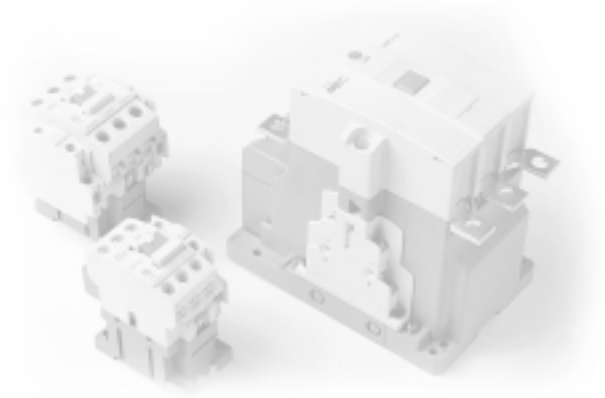
Note) ∗1 attach Aux. contacts 4NO 4NC

Standard type Magnetic Contactors

External / Mounting dimension(GMC-300~800)

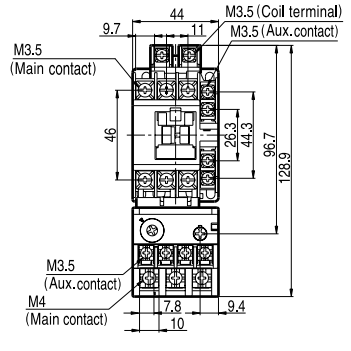
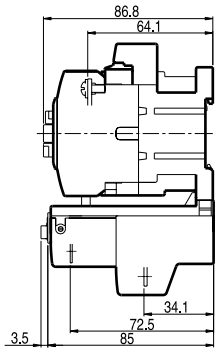
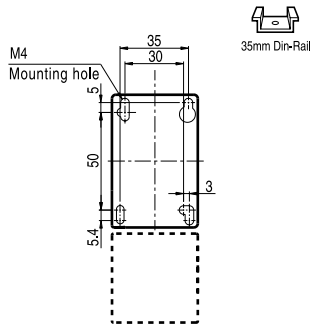
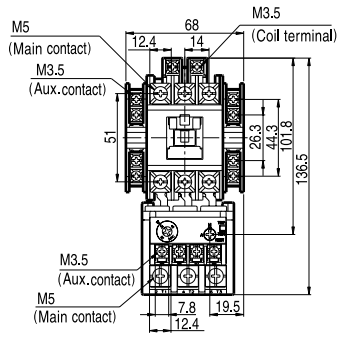
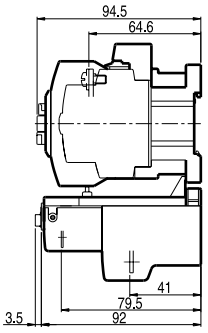
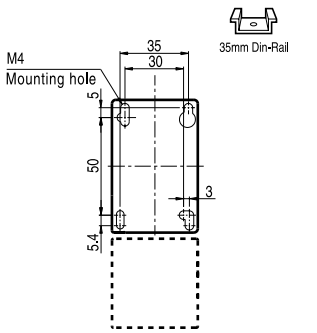
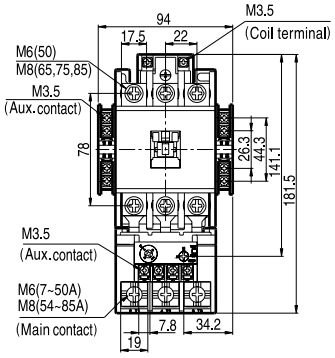
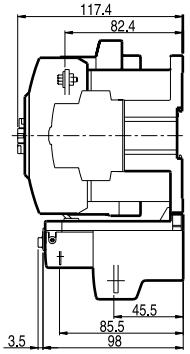
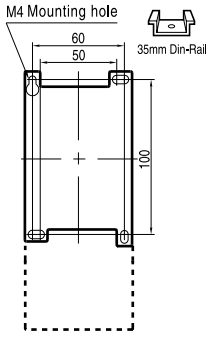
Type	External dimensions	Mounting dimensions
GMC - 300 GMC - 400		 9.2kg
GMC - 600 GMC - 800		 22.4kg
Circuit diagram	GMC - 300 ~ 800	

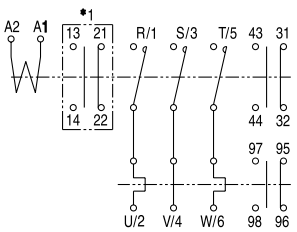
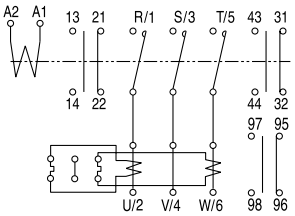
Note) ∗1 attach Aux. contacts 4NO 4NC



Standard type Magnetic Switches

External / Mounting dimension(GMS-9~85)

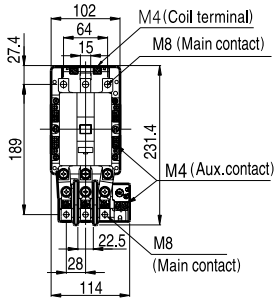
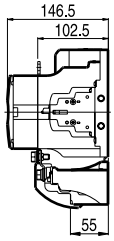
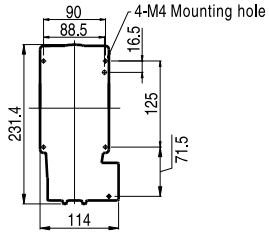
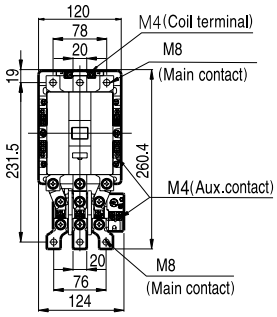
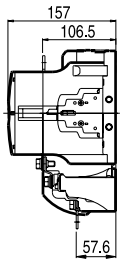
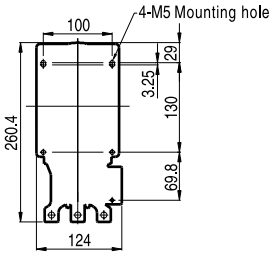
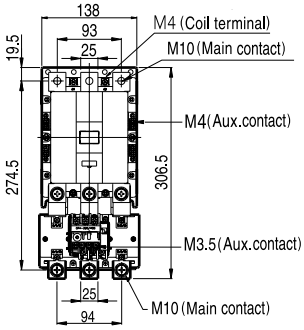
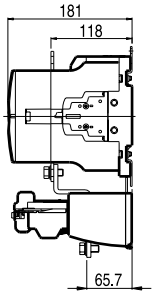
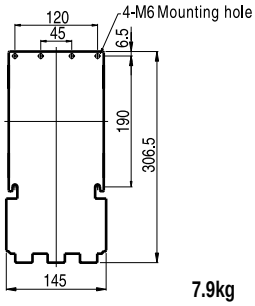
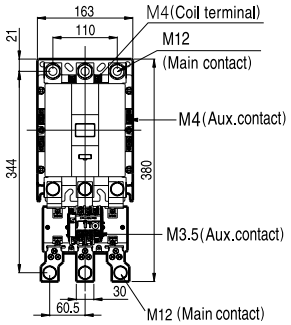
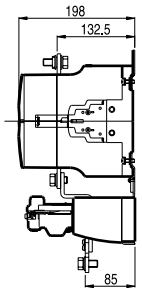
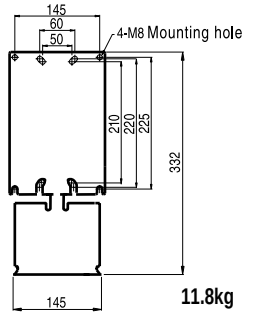
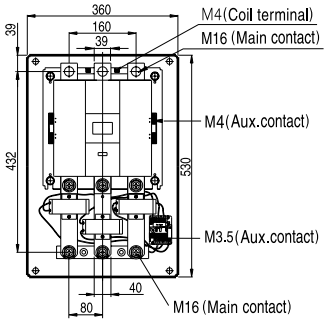
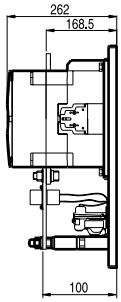
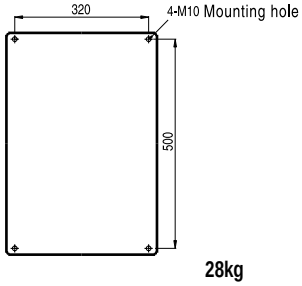
Type	External dimensions	Mounting dimensions
GMS - 9 GMS - 12 GMS - 18 GMS - 22	 	 GMS-9, 12R: 0.46kg GMS-18, 22R: 0.5kg
GMS - 32 GMS - 40	 	 0.65kg
GMS - 50 GMS - 65 GMS - 75 GMS - 85	 	 1.12kg

	GMS - 9~150	GMS - 180~800
Circuit diagram		

Note) ∗1 attach Aux. contacts 2NO 2NC

Standard type Magnetic Switches

External / Mounting dimension(GMS-100~800)

Type	External dimensions	Mounting dimensions
GMS - 100 **GMS - 125**	 	 **3.4kg**
GMS - 150	 	 **4kg**
GMS - 180 **GMS - 220**	 	 **7.9kg**
GMS - 300 **GMS - 400**	 	 **11.8kg**
GMS - 600 **GMS - 800**	 	 **28kg**

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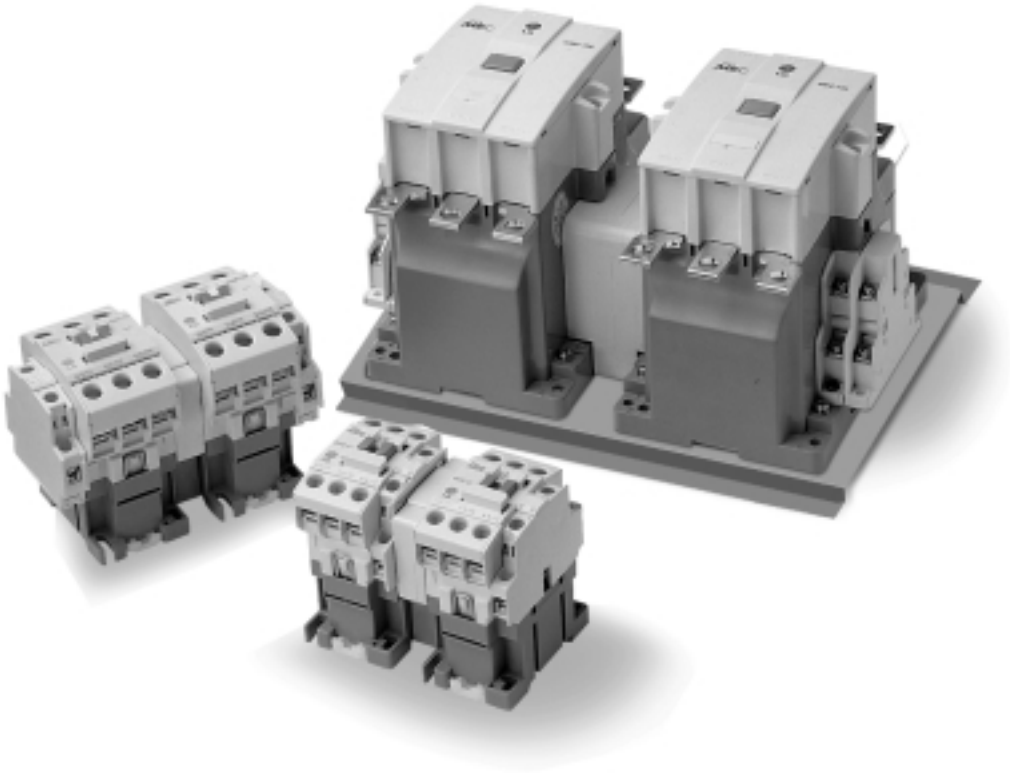
Reversing Contactors and Switches



- Reversing magnetic contactor is a combination of two standard magnetic contactors with a mechanical interlock unit.
- Applications are for forwarding, reversing, reverse phase breaking, constant, instant and transfer operation of motor.

Ratings

Magnetic contactors	Magnetic switches	Rated power (kW) (AC3 duty)			Rated current (A) (AC3 duty)			Ith AC1 duty (A)	Aux. contacts		Combined TOR	
		200~220V	380~440V	500~550V	200~220V	380~440V	500~550V		Standard	Option	Type	Ampere range(A)
GMC-9R	GMS-9R	2.5	4	4	11	9	7	20	1NO1NC ×2	AU-2 or AU-4	GTH-22	0.1~22
GMC-12R	GMS-12R	3.5	5.5	7.5	13	12	12	20				
GMC-18R	GMS-18R	4.5	7.5	7.5	18	18	13	25				
GMC-22R	GMS-22R	5.5	11	15	22	22	22	32				
GMC-32R	GMS-32R	7.5	15	18.5	32	32	28	50			GTH-40	4~40
GMC-40R	GMS-40R	11	18.5	22	40	40	32	60				
GMC-50R	GMS-50R	15	22	30	55	50	43	80			GTH-85	7~85
GMC-65R	GMS-65R	18.5	30	37	65	65	60	100				
GMC-75R	GMS-75R	22	37	45	75	75	64	110				
GMC-85R	GMS-85R	25	45	45	85	85	75	135				
GMC-100R	GMS-100R	30	55	55	105	105	85	150	2NO2NC ×2	—	GTH-100	34~125
GMC-125R	GMS-125R	37	60	60	125	120	90	150				
GMC-150R	GMS-150R	45	75	90	150	150	140	200			GTH-150	34~150
GMC-180R	GMS-180R	55	90	110	180	180	180	230			GTH-220	65~240
GMC-220R	GMS-220R	75	132	132	220	220	200	260				
GMC-300R	GMS-300R	90	160	160	300	300	250	350			GTH-400	85~400
GMC-400R	GMS-400R	125	220	225	400	400	350	420				

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Reversing Contactors

Structure and operation

Structure

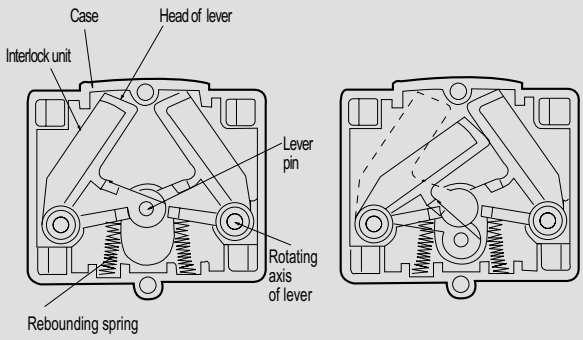
- GMC(S)-9R~85R are Din-rail mounting type
- The mechanical interlock unit is commonly used in GMC(S)-9R ~ 85R

Operation

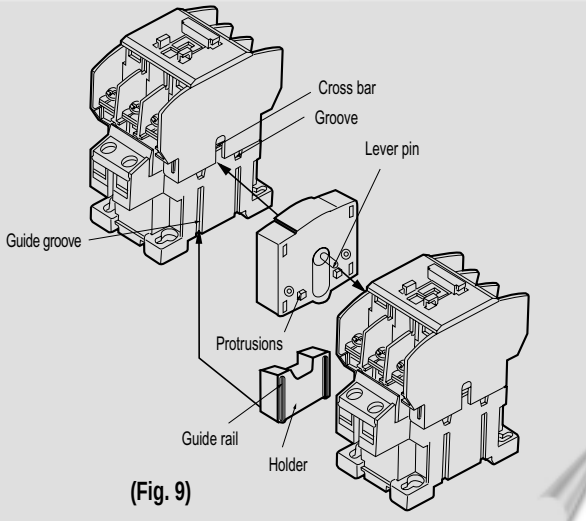
- **Open state**
  When the both sides of the contactors are OFF , lever maintains OPEN state by rebounding springs.
- **Interlocking**
  When a contactor is energized, as the lever pin comes down by the crossbar, interlock lever revolves the axis of rotation, and the heads of two levers are interlocked.
- **Releasing**
  If one of the two contactors is removed, crossbar comes up by the power of kick out spring, and then interlock lever goes up by the cross bar, and added with the power of rebounding springs, the interlock lever gets pushed up to the open position.

Handling

- The electrical interlock should be commonly connected to the NC contacts of the two contactors.
- Do not install horizontally



(a)Open state (b)Interlocked



(Fig. 9)

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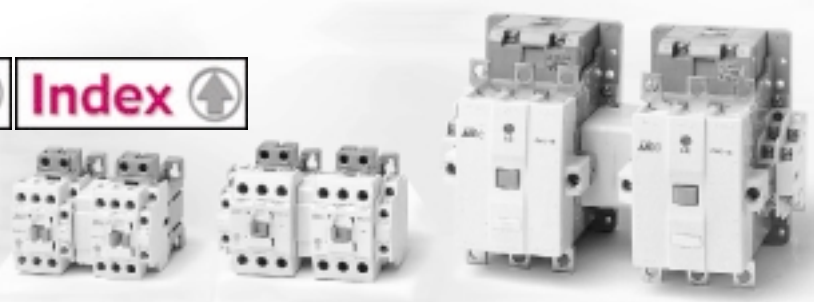
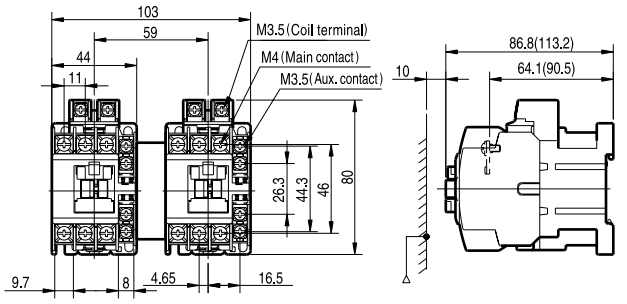
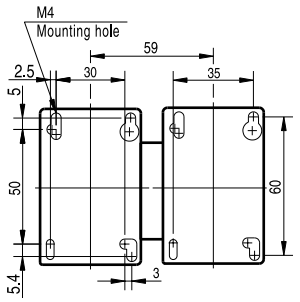
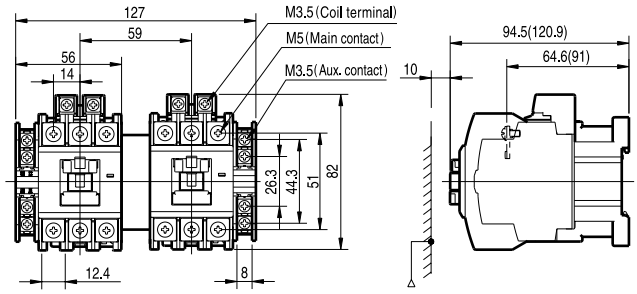
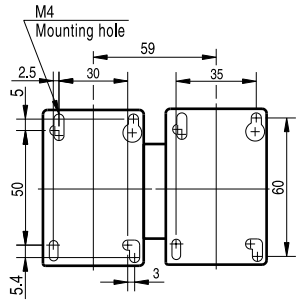
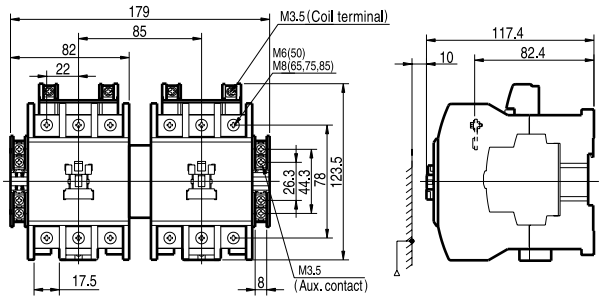
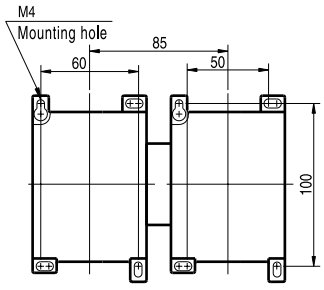
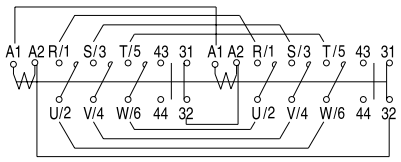
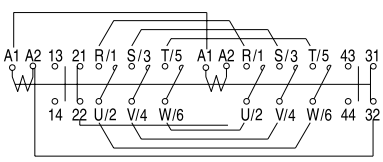


External / Mounting dimension(GMC(D)-9R~85R)

Type	External dimensions	Mounting dimensions
GMC(D) - 9R GMC(D) - 12R GMC(D) - 18R GMC(D) - 22R		 GMC(D)-9R, 12R: 0.69(1.13)kg GMC(D)-18R, 22R: 0.77(1.21)kg
GMC(D) - 32R GMC(D) - 40R		 1.0(1.44)kg
GMC(D) - 50R GMC(D) - 65R GMC(D) - 75R GMC(D) - 85R		 2.1(2.2)kg

	GMC(D) - 9R~22R	GMC(D) - 32R~85R
Circuit diagram		

Note) ∗( ) are the values for DC coil type.

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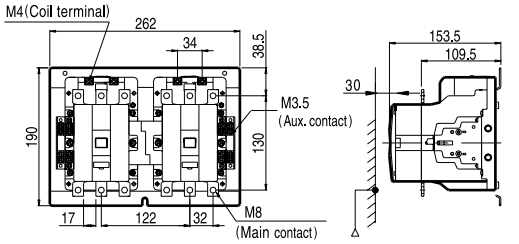
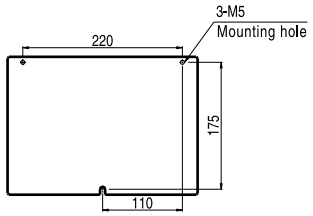
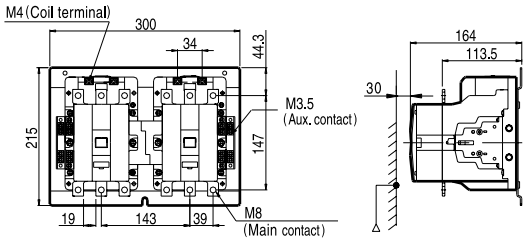
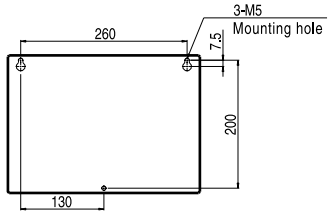
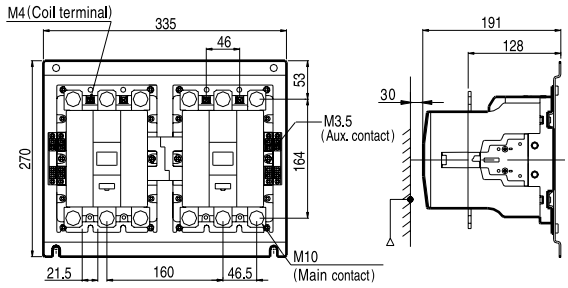
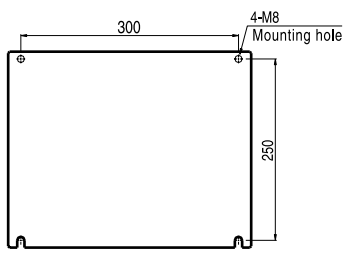
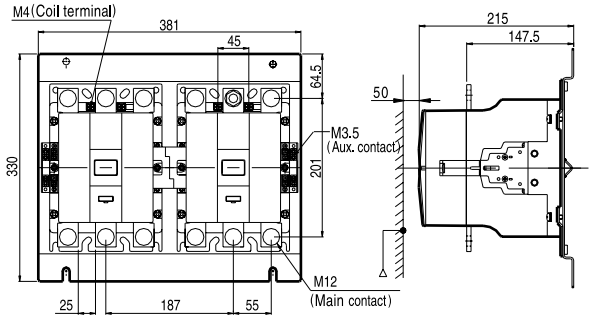
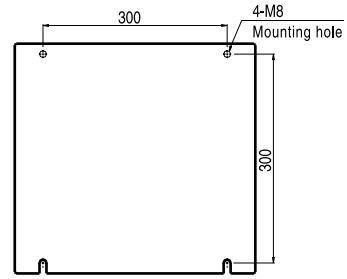
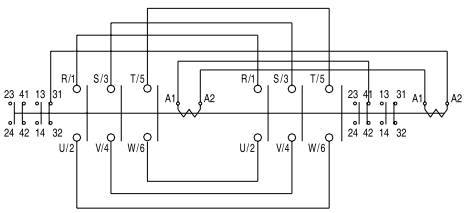
Reversing Contactors and Switches

External / Mounting dimension(GMC-100R~400R)

Type	External dimensions	Mounting dimensions
GMC - 100R GMC - 125R		 6.7kg
GMC - 150R		 8.1kg
GMC - 180R GMC - 220R		 12.9kg
GMC - 300R GMC - 400R		 21.4kg
Circuit diagram	GMC 100R ~ 400R 	

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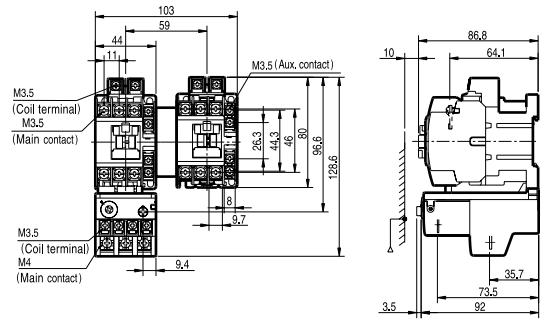
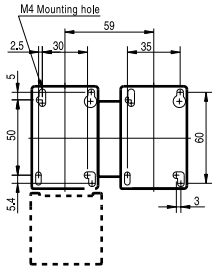
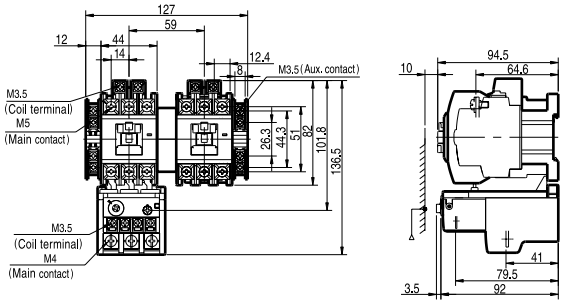
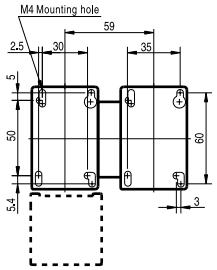
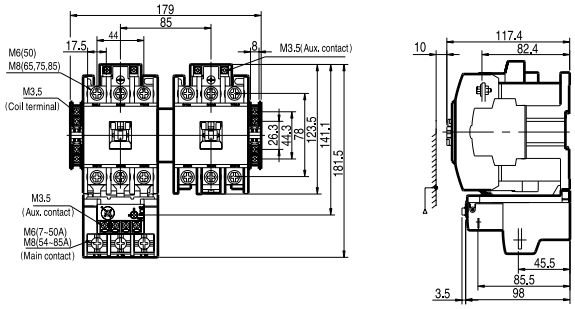
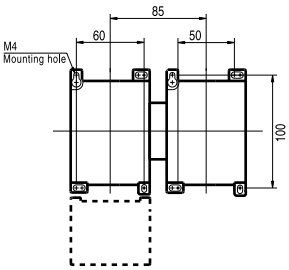
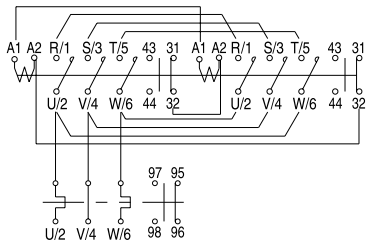
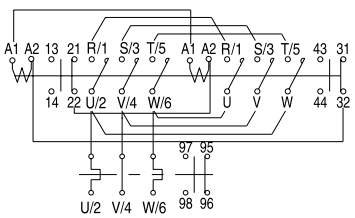
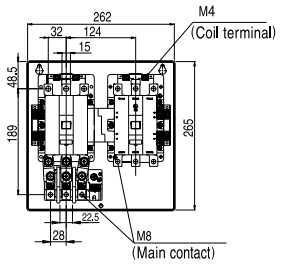
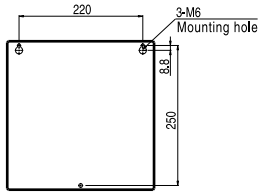
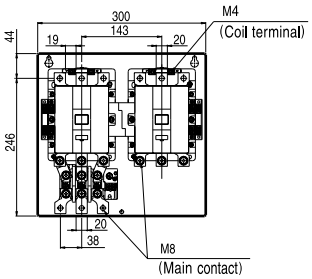
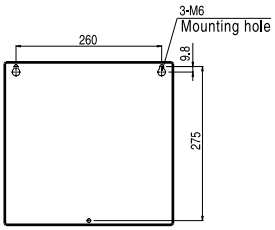
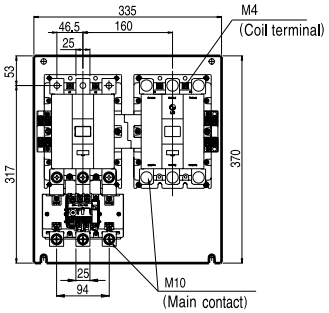
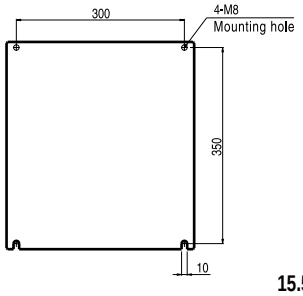
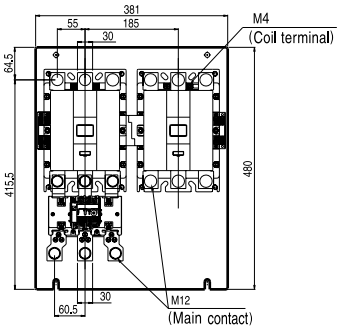
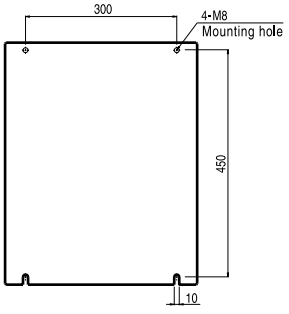
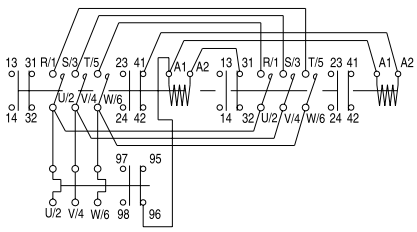
External / Mounting dimension(GMS-9R~85R)

Type	External dimensions	Mounting dimensions
GMS - 9R GMS - 12R GMS - 18R GMS - 22R		 GMS-9R, 12R: 0.81kg GMS-18R, 22R: 0.89kg
GMS - 32R GMS - 40R		 1.14kg
GMS - 50R GMS - 65R GMS - 75R GMS - 85R		 2.35kg

Circuit diagram	GMS - 9R~22R	GMS - 32R~85R
		

Reversing Switches

External / Mounting dimension(GMS-100R~400R)

Type	External dimensions	Mounting dimensions
GMS - 100R GMS - 125R		 7.3kg
GMS - 150R		 9kg
GMS - 180R GMS - 220R		 15.5kg
GMS - 300R GMS - 400R		 23kg
Circuit diagram	GMS-100R ~ 400R	

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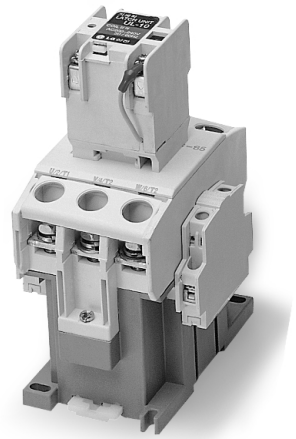
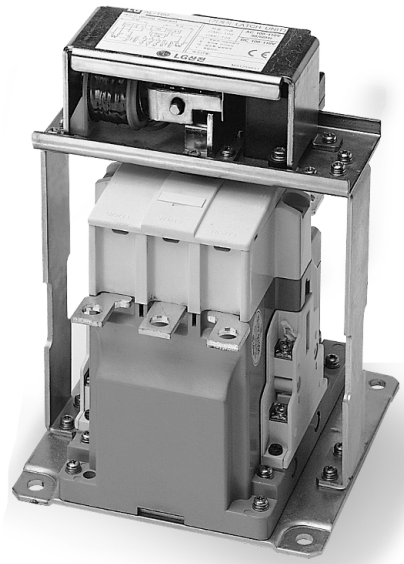
Latching Contactors





Characteristics

The mechanical Latch unit maintains the main contacts closing by the closing coil and open the main contacts by the rebound coil

Power saving and safe closing

After it is mechanically latched by the closing coil, the NC contact turned off. (Instantaneously magnetized)

Ratings

Type	Aux. contact	Close and Open Breaking current	Close and Open Frequency	Lifetime (10,000 times) Electrical	Lifetime (10,000 times) Mechanical
GMC - 9L,12L,18L,22L	1NO1NC	10 times of AC3 ratings	1200 times /hour	50	50
GMC - 32L,40L	2NO2NC			25	25
GMC - 50L,65L,75L,85L	1NO2NC				
GMC - 100L,125L	1NO2NC	10 times of AC3 ratings		25	25
GMC - 150L					
GMC - 180L,220L					
GMC - 300L,400L				20	20

Ratings of rebound coil

(Table 11)

Type	Nominal voltage	Voltage ranges
GMC- 9L ~ 85L	AC100	100~127V 50/60Hz
	AC200	200~240V 50/60Hz
	AC300	260~350V 50/60Hz
	AC400	380~440V 50/60Hz
	AC500	460~550V 50/60Hz
	DC12V	DC12V
	DC24V	DC24V
	DC48V	DC48V
	DC100V	DC100~110V
	DC125V	DC120~125V
	DC200V	DC200~220V
GMC- 100L ~ 400L	AC100V	100~127V 50/60Hz
	AC200V	200~240V 50/60Hz

Operational charcteristics

AC 220V, 60Hz basis (Table 12)

Type	Instant input power of the control coil (VA) Close	Instant input power of the control coil (VA) Open	Operational voltage (V) Close	Operational voltage (V) Open	Operational time (ms) Close	Operational time (ms) Open	Operational transformer (VA)
GMC - 9L,12L,18L,22L	100	90	160	45	15	11	40~60
GMC - 32L,40L	100	90	160	45	15	11	40~60
GMC - 50L,65L,75L,85L	120	100	160	45	30	15	40~60
GMC - 100L,125L	298	500	80	150	30~34	10~25	500
GMC - 150L	298	500	80	150	37~41	10~25	500
GMC - 180L,220L	380	500	80	150	45	10~25	500
GMC - 300L,400L	571	500	80	150	45~50	10~25	500

주) 1. **The operational times are the average values after coil is energized**

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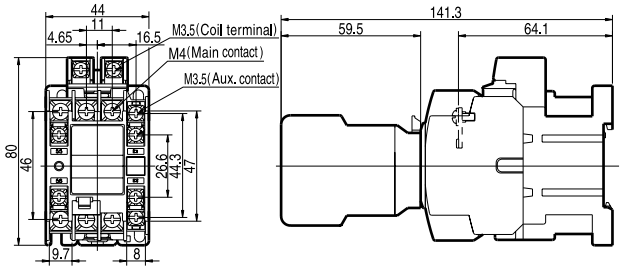
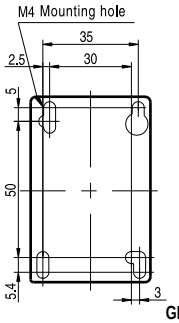
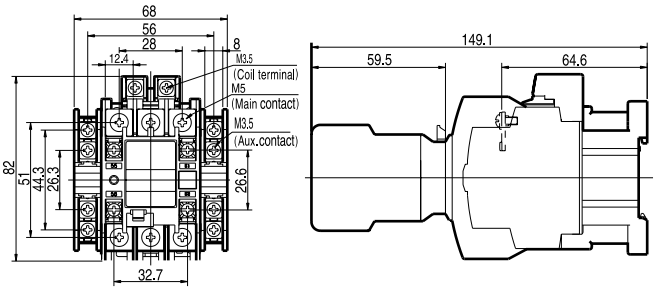
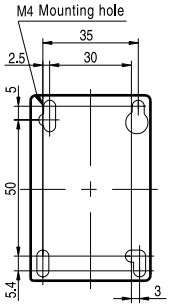
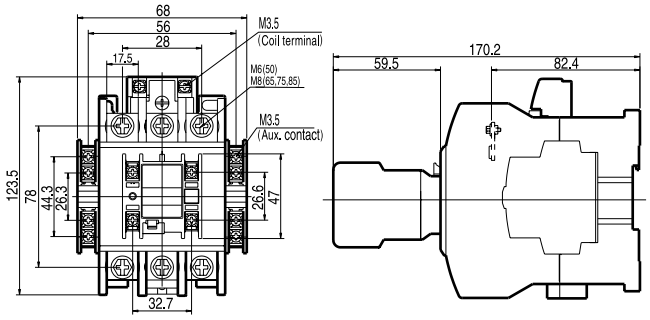
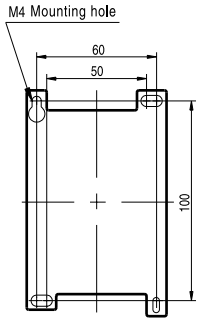
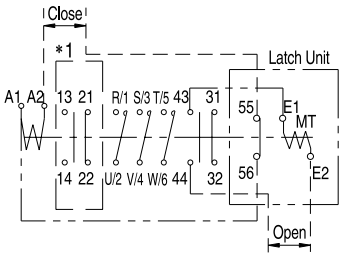
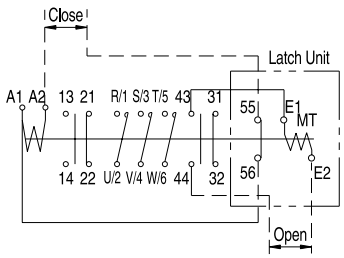
Latching contactors

External / mounting dimensions (GMC-9L~85L)

Type	External dimensions	Mounting dimensions
GMC - 9L GMC - 12L GMC - 18L GMC - 22L		35mm Din-Rail  GMC-9L,12L: 0.47kg GMC-18L,22L : 0.51kg
GMC - 32L GMC - 40L		35mm Din-Rail  0.59kg
GMC - 50L GMC - 65L GMC - 75L GMC - 85L		35mm Din-Rail  1.14kg

Contacts Configuration	GMC - 9L~22L	GMC - 32L~85L
	 Note) *1 attach Aux. contacts 2NO 2NC	

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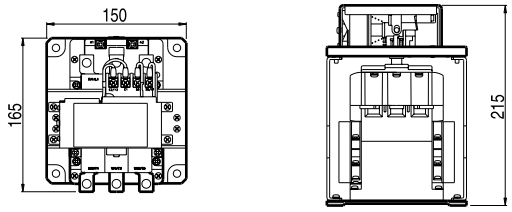
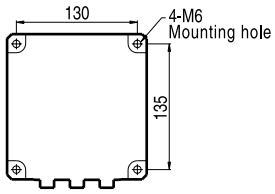
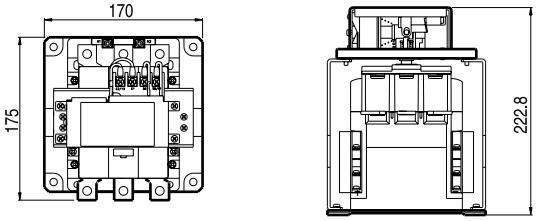
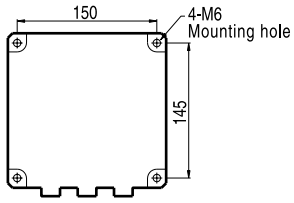
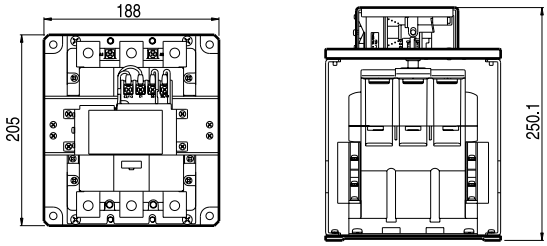
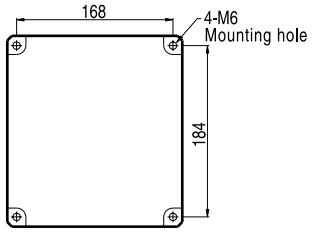
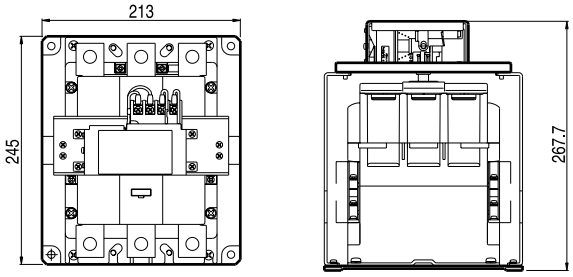
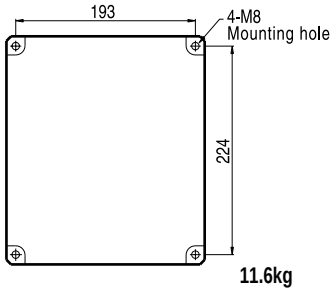
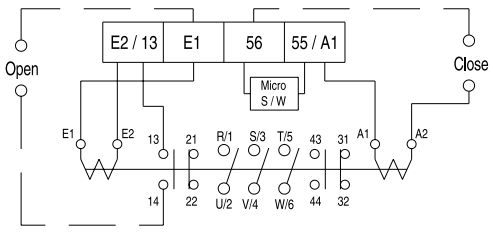
External / mounting dimensions (GMC-100L~ 400L)

Type	External dimensions	Mounting dimensions
GMC - 100L **GMC - 125L**		 **4.5kg**
GMC - 150L		 **5.1kg**
GMC - 180L **GMC - 220L**		 **7.4kg**
GMC - 300L **GMC - 400L**		 **11.6kg**
Contacts Configuration	**GMC-100L ~ 400L** 	

Note) ∗ The users wire the dotted line

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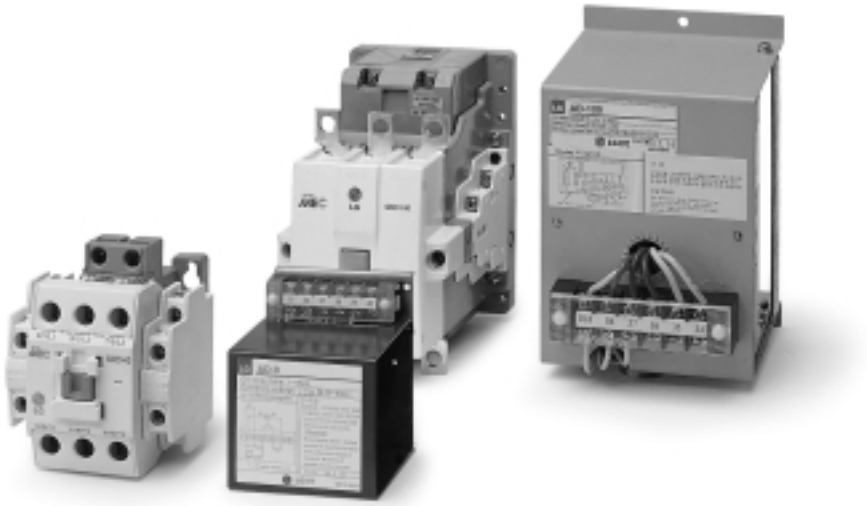
Contactors with delayed open device

Characteristics

Maintain the magnetic contactors
"on" against instantaneous power failure
or voltage drops for 1~4seconds by the circuit
with condensors.



Ratings

(Table 13)

Type		Rate power(kw) (AC 3 duty)			Rated current (A) (AC 3 duty)			1 th AC 1 duty	Aux. contact
Dalay open device	Applied MC	200~240V	380~440V	500~550V	200~240V	380~440V	500~550V	(A)	
AD - 9	GMD - 9	2.5	4	4	11	9	7	20	1NO1NC
	GMD - 12	3.5	5.5	7.5	13	12	12	20	
	GMD - 18	4.5	7.5	7.5	18	18	13	25	
	GMD - 22	5.5	11	15	22	22	22	32	
	GMD - 32	7.5	15	18.5	32	32	28	50	2NO2NC
	GMD - 40	11	18.5	22	40	40	32	60	
AD - 50	GMD - 50	15	22	30	55	50	43	80	
	GMD - 65	18.5	30	37	65	65	60	100	
	GMD - 75	22	37	45	75	75	64	110	
	GMD - 85	25	45	45	85	85	75	135	
AD - 100	GMC - 100	30	55	55	105	105	85	150	
	GMC - 125	37	60	60	125	120	90	150	
	GMC - 150	45	75	90	150	150	140	200	
	GMC - 180	55	90	110	180	180	180	230	
	GMC - 220	75	132	132	220	220	200	260	
AD - 300	GMC - 300	90	160	160	300	300	250	350	
	GMC - 400	125	220	225	400	400	350	420	
AD - 600	GMC - 600	190	330	330	630	630	500	660	
	GMC - 800	220	440	500	800	800	720	800	

Performance

(Table 14)

Type	Short circuit · breaking current (A) (A. C.-3duty)	Frequency	Lifetime		Delay time	condensor	Operational voltage
			Mec.	Ele.			
GMD - 9~40 + AD - 9 GMD - 50~85+AD - 50	Short : Over10 ×In Breaking :Over 8 ×In	600 time / hour	5Mil.	1Mil.	1~4sec	1) Switching : Over 100 thousand 2) Charging : • Below 45℃ : 80 thousand • Below 50℃ : 60 thousand	AC 100~110V AC 200~220V 50Hz / 60Hz
GMC - 100~220 + AD - 100 GMC - 300~400 + AD - 300 GMC - 600~800 + AD - 600				0.5Mil .			

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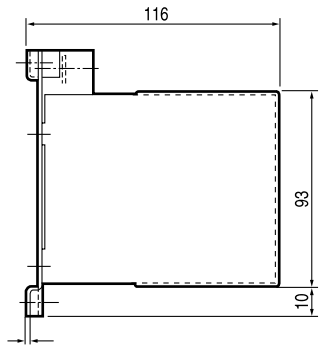
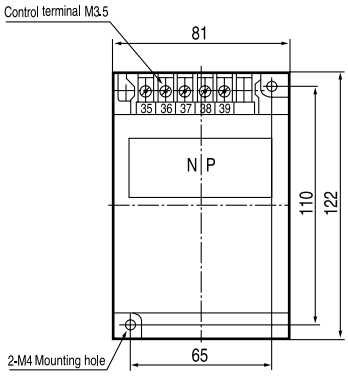
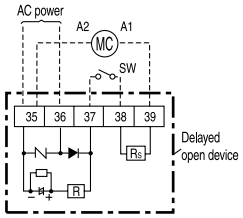
External / mountings dimensions

AD-9



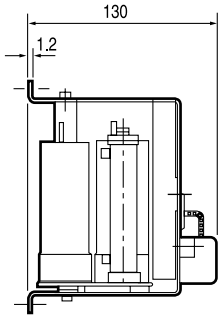


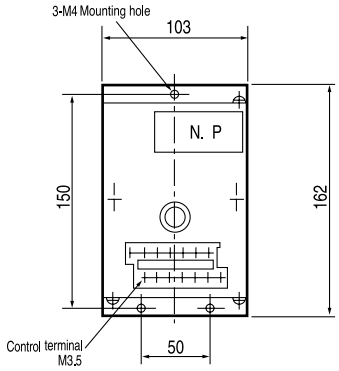
Wiring diagram



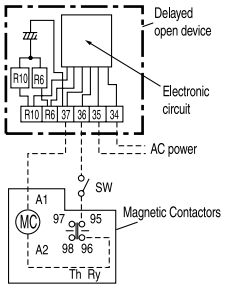
Weight : 0.85kg

AD-50
100
300
600





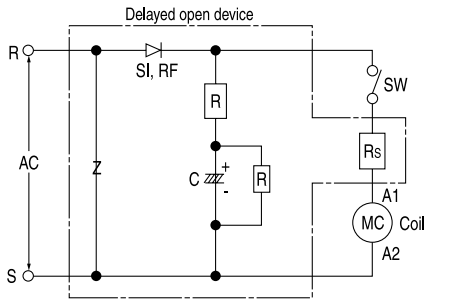
Wiring diagram



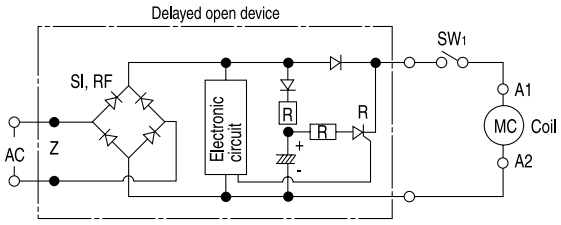
Weight : 0.8kg

Control circuit diagram

AD - 9	AD - 50 ~ 600

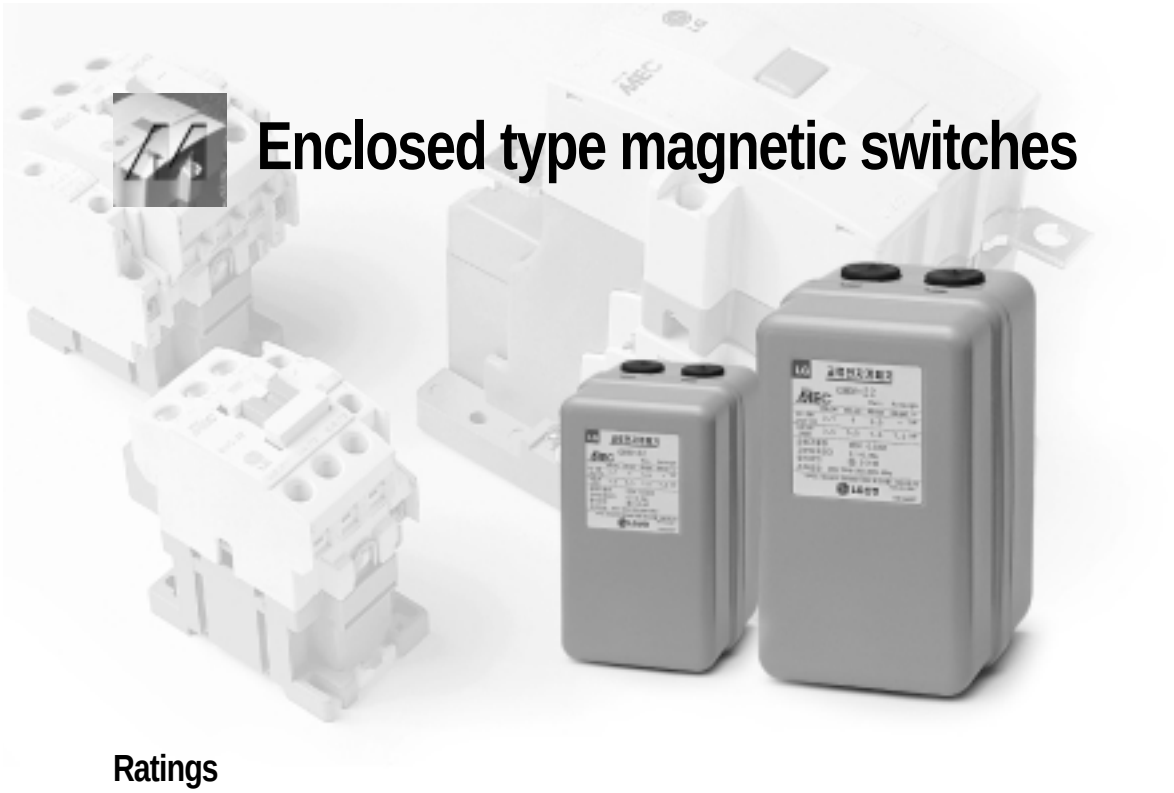


SI, RF : Rectifier
C : Condenser
Rs : Series resistance



SI, RF : Rectifier
C : Condenser
Q : Thyristor

Enclosed type magnetic switches



Ratings

(Table 15)

Type	Rated power (kw)					Rated current (A)			AC1 duty
	1pole moter		AC 3 duty			AC 3 duty			
	110V	220V	200V~ 220V	380V~ 440V	500V~ 550V	200V~ 220V	380V~ 440V	500V~ 550V	A
GMW - 9	0.4	0.8	2.5	4	4	11	9	7	20
GMW - 12	0.5	1	3.5	5.5	7.5	13	12	12	20
GMW - 18	0.75	1.5	4.5	7.5	7.5	18	18	13	25
GMW - 22	0.9	1.8	5.5	11	15	22	22	22	32
GMW - 32	1.2	-	7.5	15	18.5	32	32	28	50
GMW - 40	1.7	-	11	18.5	22	40	40	32	60
GMW - 50	-	-	15	22	30	55	50	43	80
GMW - 65	-	-	18.5	30	37	65	65	60	100
GMW - 75	-	-	22	37	45	75	75	64	110
GMW - 85	-	-	25	45	45	85	85	75	135
GMW - 100	-	-	30	55	55	105	105	85	150
GMW - 125	-	-	37	60	60	125	120	90	150
GMW - 150	-	-	45	75	90	150	150	140	200
GMW - 180	-	-	55	90	110	180	180	180	230
GMW - 220	-	-	75	132	132	220	220	200	260

Type designation

GMW — **22** — **B** — **AC220V**

GMW: Enclosed type magnetic switches

22: Rated current (440V)

9	2.7kW	75	37kW
12	4kW	85	37kW
18	5.5kW	100	50kW
22	7.5kW	125	60kW
32	11kW	150	75kW
40	15kW	180	90kW
50	22kW	220	110kW
65	30kW		

B: Application

-	Steel case
B	Steel case (push button type)
M	Plastic case
MB	Plastic case (Push button type)

AC220V: Operation voltage

Same with the magnetic contactors

* Refer to chart 4 on page 13

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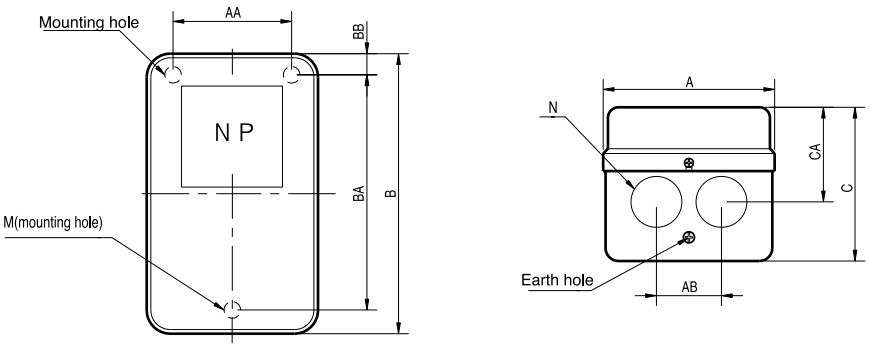
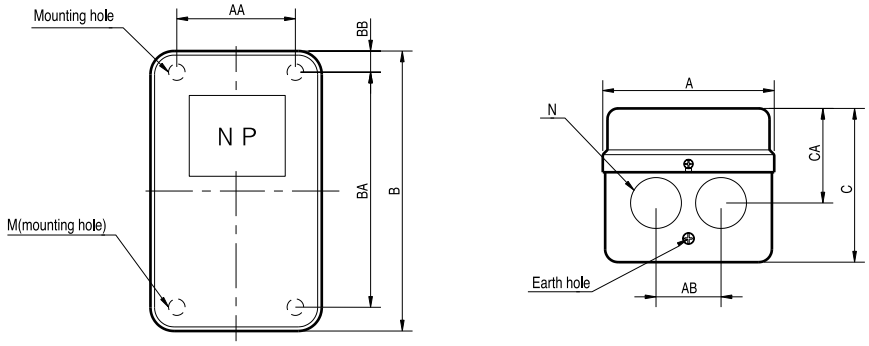
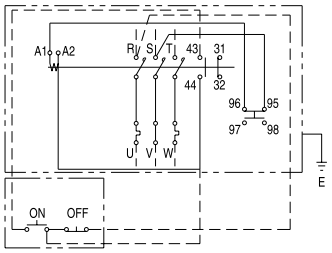
External / mounting dimension

Type	External / mounting dimension
GMW - 9~22	
GMW - 32~220	

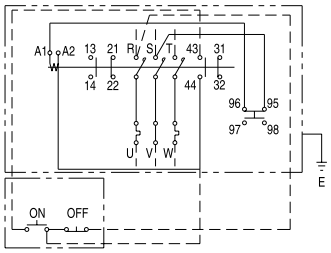
Type	A	AA	AB	B	BA	BB	C	CA	M	N	weight(kg)
GMW-9, 12, 18, 22	104	76	40	170	140	15	114	41	M5	ø 22	1.1
GMW-32, 40	145	95	55	245	165	40	130	50	M5	ø 35	1.7
GMW-50, 65, 75, 85	160	120	74	290	220	35	141	50	M5	ø 35	3.6
GMW-100, 125	230	170	90	380	330	25	190	80	M9	ø 42~50	8.2
GMW-150	230	170	90	380	330	25	190	80	M9	ø 42~50	9
GMW-180	247	200	120	480	400	40	209	85	M9	ø 44 ~ 50	16.7
GMW-220	247	200	120	480	400	40	209	85	M9	ø 44 ~ 50	16.7

Circuit diagram

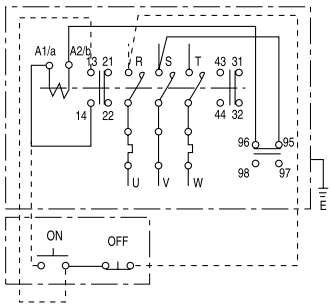
GMW - 9~22



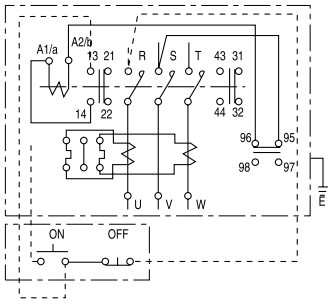
GMW - 32~85



GMW - 100~150



GMW - 180~220



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Enclosed type magnetic switches (Push button type)

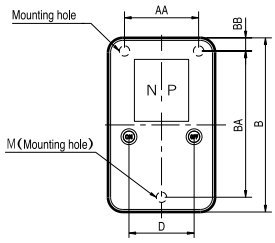
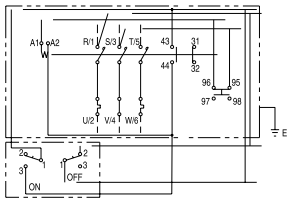
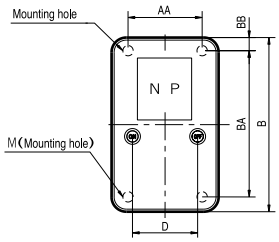
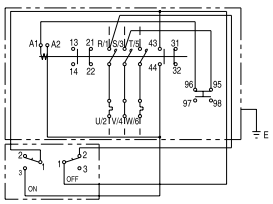
[Metal enclosure]

Ratings

(Table 16)

Type	Rated power (kw)					Rated current (A)			AC1 duty
	1pole moter		AC 3 duty			AC3 duty			
	110V	220V	200V~ 220V	380V~ 440V	500V~ 550V	200V~ 220V	380V~ 440V	500V~ 550V	A
GMW - 9B	0.4	0.8	2.5	4	4	11	9	7	20
GMW - 12B	0.5	1	3.5	5.5	7.5	13	12	12	20
GMW - 18B	0.75	1.5	4.5	7.5	7.5	18	18	13	25
GMW - 22B	0.9	1.8	5.5	11	15	22	22	22	32
GMW - 32B	1.2	-	7.5	15	18.5	32	32	28	50
GMW - 40B	1.7	-	11	18.5	22	40	40	32	60
GMW - 50B	-	-	15	22	30	55	50	43	80
GMW - 65B	-	-	18.5	30	37	65	65	60	100
GMW - 75B	-	-	22	37	45	75	75	64	110
GMW - 85B	-	-	25	45	45	85	85	75	135

External / Mounting dimension

Type	External / Mounting dimension	Circuit diagram
GMW-9B~22B		
GMW-32B~85B		

Type	A	AA	AB	B	BA	BB	C	CA	D	M	N	Weight(kg)
GMW - 9B, 12B, 18B, 22B	104	76	40	170	140	15	114	41	59	M5	ø22	1.1
GMW - 32B, 40B	145	95	55	245	165	40	130	50	97	M5	ø35	1.7
GMW - 50B, 65B, 75B, 85B	160	120	74	290	220	35	141	50	114	M5	ø35	3.6

Contents Index

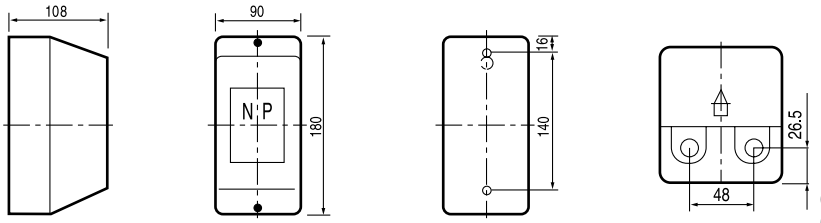
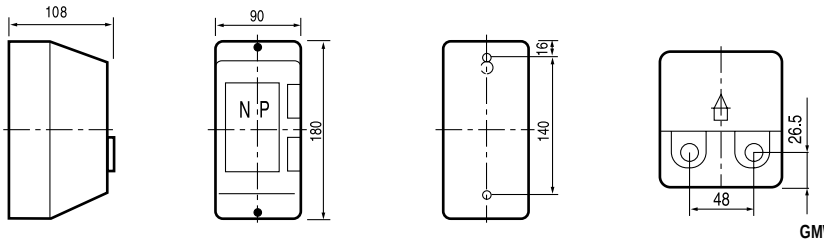
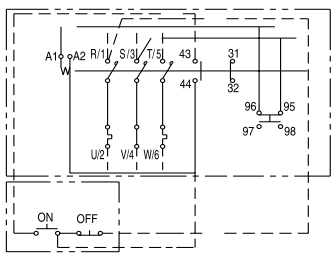
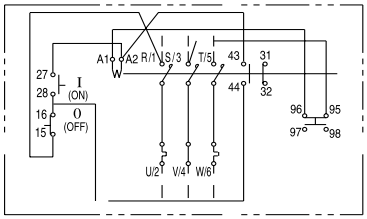
[Plastic enclosure]

Ratings

(Table 17)

Type		Rated power(kW)					Rated current(A)			AC1 duty
		1pole moter		AC 3 duty			AC 3duty			
Without PB	Pushbutton type	110V	220V	200V~ 220V	380V~ 440V	500V~ 550V	200V~ 220V	380V~ 440V	500V~ 550V	A
GMW - 9M	GMW - 9MB	0.4	0.8	2.5	4	4	11	9	7	20
GMW - 12M	GMW - 12MB	0.5	1	3.5	5.5	7.5	13	12	12	20
GMW - 18M	GMW - 18MB	0.75	1.5	4.5	7.5	7.5	18	18	13	25
GMW - 22M	GMW - 22MB	0.9	1.8	5.5	11	15	22	22	22	32

External / mounting dimension

Type	EXternal / mounting dimension
GMW-9M~22M	 GMW-9M, 12M: 0.83kg GMW-18M, 22M: 0.88kg
GMW-9M~22MB	 GMW-9MB,12MB: 0.83kg GMW-18MB,22MB: 0.88kg
Circuit diagram	GMW-9M~22M:  GMW-9MB~22MB: 

Contactor relays

Characteristics

- **High reliability**
  Increase the reliability by use of the pure silver contacts.
- **Long lifetime**
  10Million mechanical cycles and 0.5~1Million electrical cycles according to the rated current.
- **Din-rail mounting(35m)**
- **Finger Proof(Standard)**

Ratings

(Table 18)

Type			GMR - 4(D)	GMR - 6(D)	GMR - 8(D)
Contacts available			4NO, 3NO1NC, 2NO2NC, 1NO3NC,4NC	6NO, 5NO1b, 4NO2NC, 3NO3NC, 2NO4NC	8NO, 7NO1NC, 6NO2NC, 5NO3NC, 4NO4NC
Rated insulation voltage(Ui)			690V		
Thermal current (Ith)			16A		
AC ratings	Duties		AC15 duty (Inductive load)		AC12 (Resistive load)
	Rated current (A)	AC110V	6		10
		AC220V	3		8
		AC440V	1.5		5
		AC550V	1.2		5
	Short circuit -Breaking current (A)	AC110V	66		66
		AC220V	33		33
		AC440V	16.5		16.5
		AC550V	13.2		13.2
DC ratinge	Duties	AC220V	DC13 duty (Inductive load)		DC12 (Resistive load)
	Rated current (A)	DC24V	3		5
		DC48V	1.5		3
		DC110V	1.1		2.5
		DC220V	0.55		1
	Short circuit -Breaking current (A)	DC24V	3.7		-
		DC48V	1.8		-
		DC110V	1.4		-
		DC220V	0.7		-
Lifetime (10,000times)	Electrical		50		25
	Mechanical		2,000		
Frequency	Time / hour		1,800		

Performance

(Table 19)

Type	Pole	Operating cycles (Times/hour)	Mechanical lifetime (10.000times)	Electrical lifetime (10.000times)				
				AC 15 duty		AC 12 duty		AC 13,12 duty
				220V	440V	220V	440V	12~220V
GMR - 4, 4D	4	1,800	1,000	50	50	25	25	50
GMR - 6, 6D	6	1,800	1,000	50	50	25	25	50
GMR - 8, 8D	8	1,800	1,000	50	50	25	25	50

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Ratings of the operation coil

1) Ratings of the AC coil

(Table 20)

Type	Rated voltage	
	60Hz	50Hz
GMR - 4 GMR - 6 GMR - 8	24V, 48V, 110V, 120V,208V, 220V 240V, 277V, 380V, 440V,480V, 600V	24V, 42V, 48V,100V 110V,220V, 240V 380V, 400V, 440V, 500V,550V

Note) 1. In GMC-9~85 contactors, 50Hz and 60Hz coils are separated.
2. The operation volatage ranges 0.85~1.1 times of the rated votage

2) Ratings of the DC coil

(Table 21)

Type	Rated voltage
GMR - 4D GMR - 6D GMR - 8D	12V, 24V, 48V 100V ,110V, 125V, 200V, 220V ,250V

Coil characteristics

1) AC COIL (AC 220V, 60Hz basis)

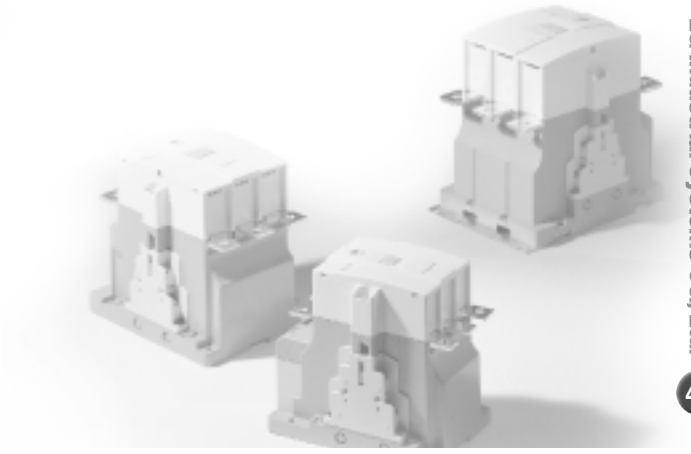
(Table 22)

Type		Coilconsumption (VA)		heat dissipation (W)	Operation votage (V)		Operation time (ms)			
		Inrush	Sealed		Pck-up voltage	Drop-out voltage	Coil ON → NO contact ON	Coil ON → NC contact OFF	Coil OFF → NO contact OFF	Coil OFF → NC contact ON
GMR - 4	4NO	95	9	2	141~156	105~125	10~17	–	7~13	–
	2NO2NC				138~148	110~130	8~15	6~15	7~13	8~15
GMR - 6	6NO				145~160	100~120	10~17	–	7~13	–
	3NO3NC				140~155	105~125	10~16	5~13	7~13	8~15
GMR - 6	8NO				150~160	90~110	10~18	–	7~13	–
	4NO4NC				148~158	95~115	10~16	5~13	7~13	8~15

2) DC COIL (DC110V basis)

(Table 23)

Type		Coil consumption(VA)		Time constant (ms)	Operation voltage (VA)		Operation time (ms)			
		Inrush	Sealed		Pick-up voltage	Drop-out voltage	Coil ON → NO contact ON	Coil ON → NC contactOFF	Coil OFF → NO contact OFF	Coil OFF → NC contact ON
GMR - 4D	4NO	9	9	50	65~75	15~35	45~55	–	7~13	–
	2NO2NC				63~73	18~38	40~50	20~30	7~13	13~19
GMR - 6D	6NO				68~78	15~35	45~55	–	7~13	–
	3NO3NC				63~73	18~38	40~50	20~30	7~13	8~15
GMR - 6D	8NO				70~80	15~35	45~55	–	7~13	–
	4NO4NC				63~73	18~38	40~50	20~30	7~3	13~19



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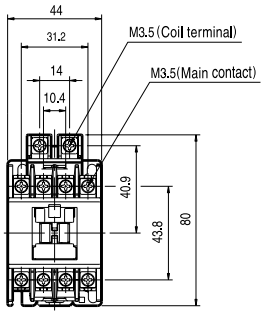
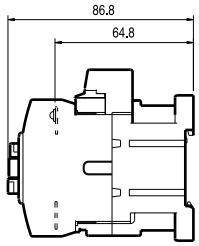
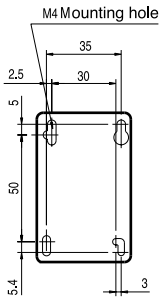
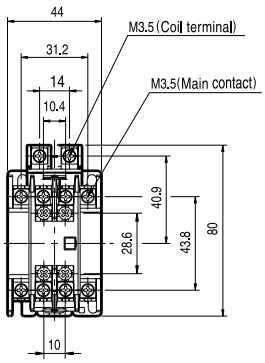
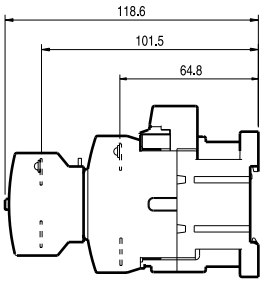
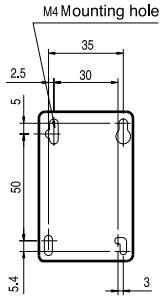
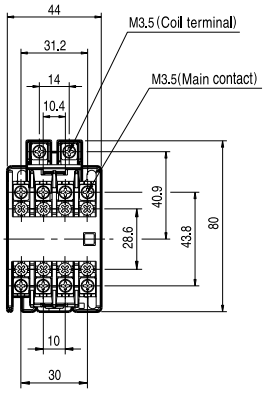
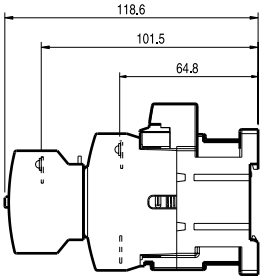
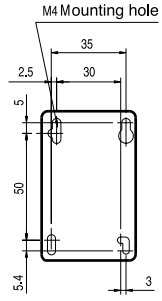
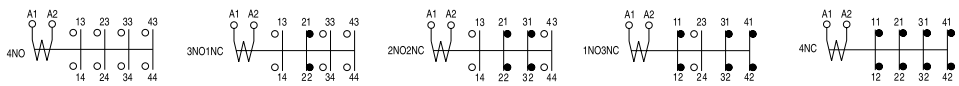
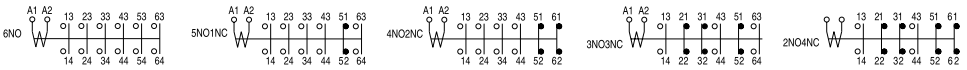
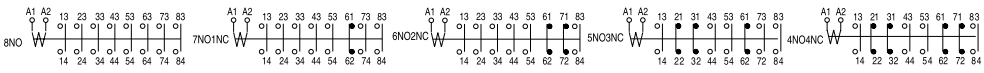
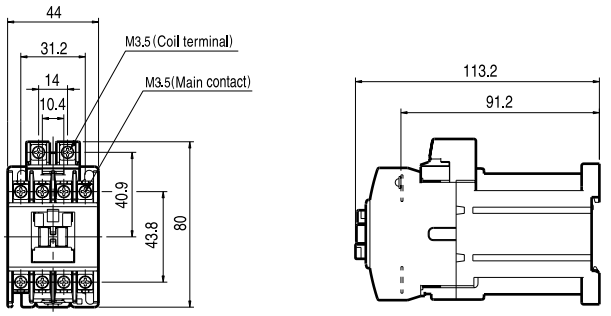
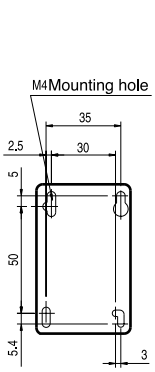
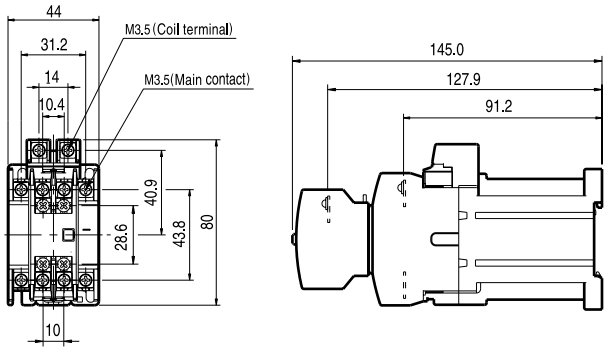
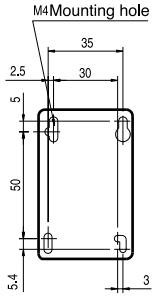
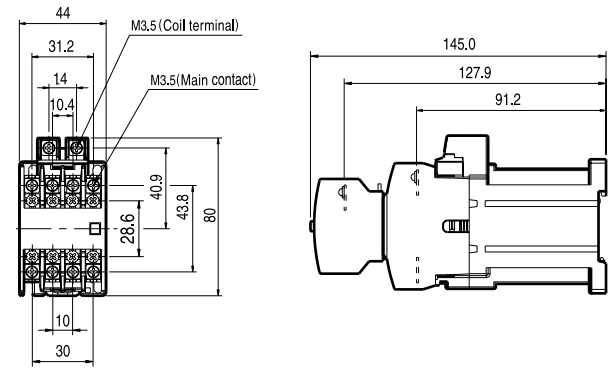
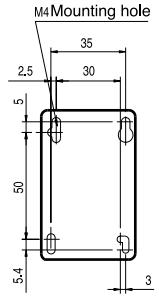
Contactor relays

External / mounting dimension (GMR-4~8)

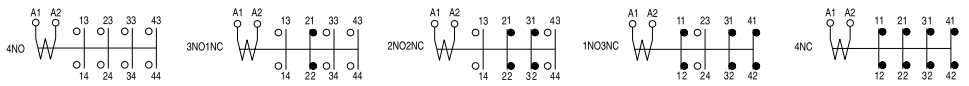
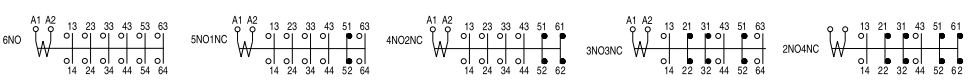
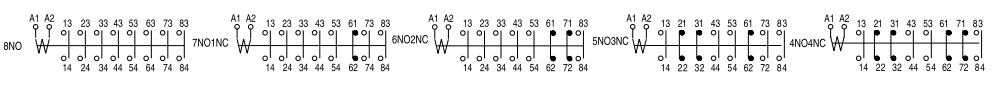
Type	External dimension	mounting dimension
GMR - 4	 	35mm Din-Rail  0.33kg
GMR - 6	 	35mm Din-Rail  0.36kg
GMR - 8	 	35mm Din-Rail  0.38kg

Contacts Configuration		
	GMR - 4	
	GMR - 6	
	GMR - 8	

External / mounting dimension (GMR-4D~8D)

Type	External dimension	Mounting dimension
GMR - 4D		 35mm Din-Rail 0.55kg
GMR - 6D		 35mm Din-Rail 0.57kg
GMR - 8D		 35mm Din-Rail 0.59kg

Contacts Configuration

GMR - 4D	
GMR - 6D	
GMR - 8D	

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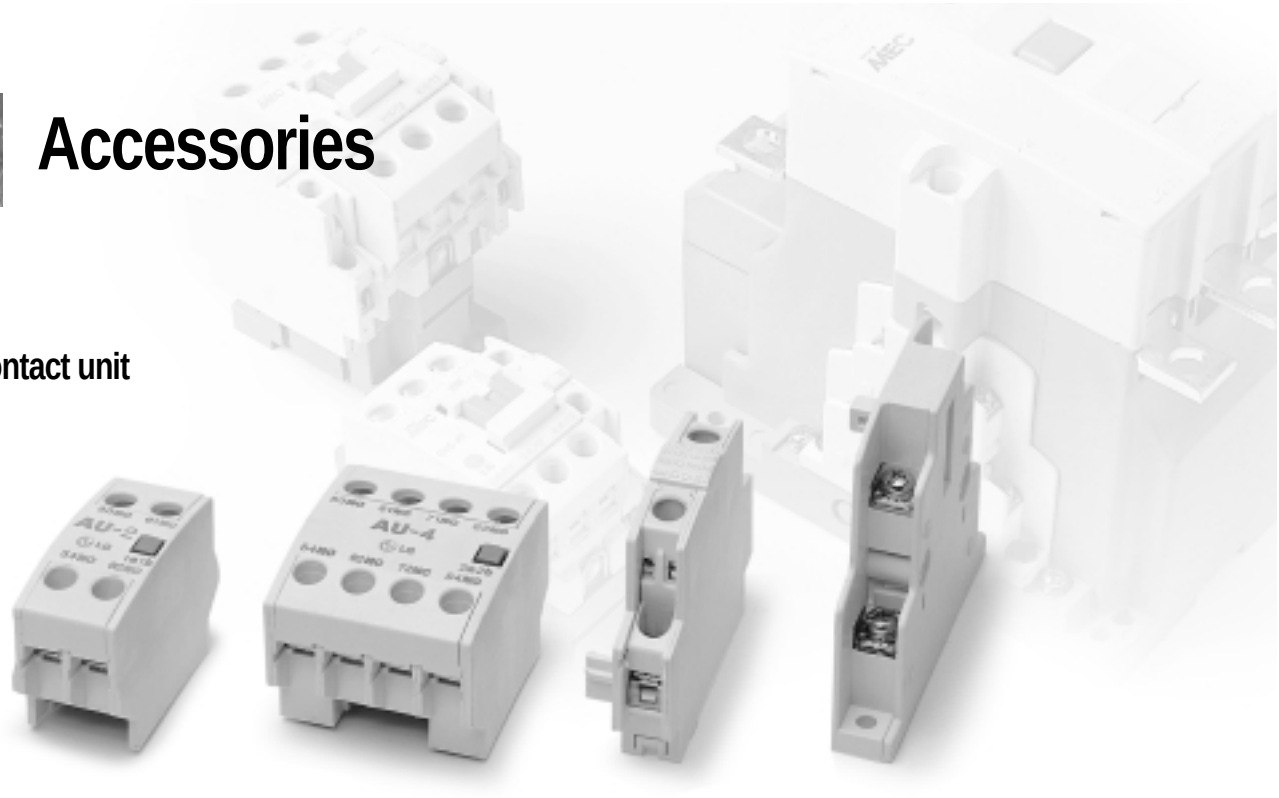
Accessories



Aux. Contact unit

Head on

(Table 24)

Type	Pole	Contact configuration	Combined contactors
AU - 2	2	2NO, 1NO1NC	GMC(D)-9~GMC(D)-85
AU - 4	4	4NO, 3NO1NC, 2NO2NC,1NO3NC, 4NC	

Side on

(Table 25)

Type	Pole	Contact configuration	Combined contactors
AU - 1	2	1NO1NC	GMC(D)-9~GMC(D)-85
AU - 100	2	1NO1NC	GMC-100~GMC-800

Ratings

(Table 26)

Type		Rated current (A)																Thermal current
		AC15 duty				DC13 duty				AC12 duty				DC12 duty				
		110V	220V	440V	550V	24V	48V	110V	220V	110V	220V	440V	550V	24V	48V	110V	220V	
Head-on	AU - 2	6	3	1.5	1.2	3	1.5	0.55	0.27	10	8	5	5	5	3	2.5	1	16
	AU - 4	6	3	1.5	1.2	3	1.5	0.55	0.27	10	8	5	5	5	3	2.5	1	16
Side-on	AU - 1	6	3	1.5	1.2	3	1.5	0.55	0.27	10	8	5	5	5	3	2.5	1	16
	AU - 100	6	5	3	3	6	3	1.2	0.2	10	10	5	5	5	3	1.5	0.25	16

Performance

(Table 27)

Type	Operating cycles (Times / hour)	Mechanical lifetime (10,000 time)	Electrical lifetime (10,000times)				
			AC15 duty		AC12 duty		DC13,12 duty
			220V	440V	220V	440V	24~220V
AU - 2	1800	2000	50	50	25	25	50
AU - 4	1800	2000	50	50	25	25	50
AU - 1	1800	2500	50	50	25	25	50
AU - 100	1800	1000	50	50	25	25	50

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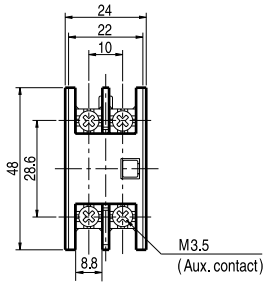
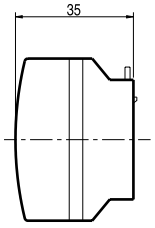
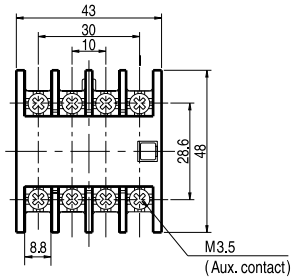
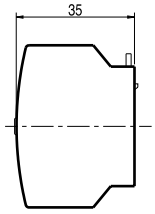
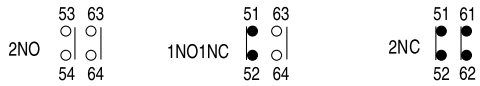
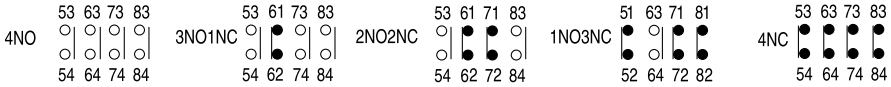
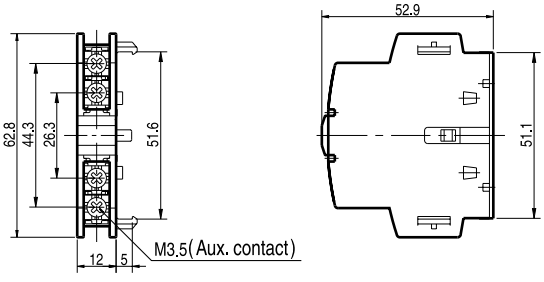
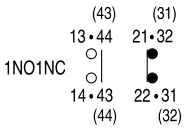
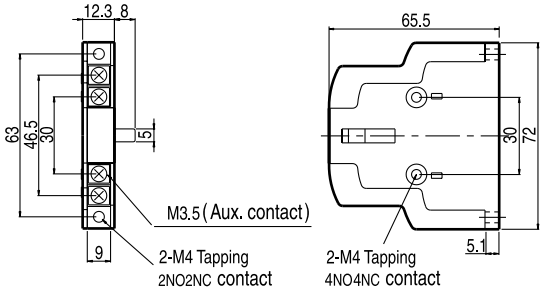
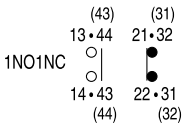
External / Mounting dimension

Head on

Type		External dimension
AU - 2		  28g
AU - 4		  50g
Contacts available	AU - 2	
	AU - 4	

Side on

Type	External / Mounting dimension	Contacts avaiable
AU - 1	 33g	
AU - 100	 45g	

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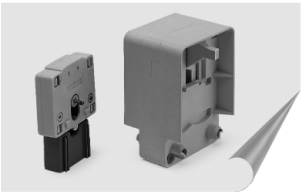
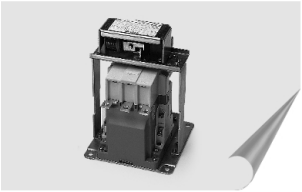


Mechanical Interlock unit

(Table 28)

Type	Applied contactors
AR - 9	GMC(D)-9~GMC(D)-85
AR - 100	GMC-100~GMC-150
AR - 180	GMC-180~GMC-400

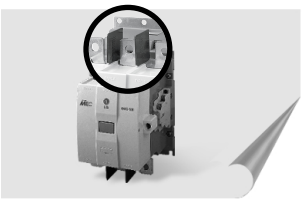


Mechanical latch unit

(Table 29)

Type	Applied contactors
AL - 9	GMC-9 ~ 40
AL - 50	GMC-50~85
AL - 100	GMC-100,125

Type	Applied contactors
AL - 150	GMC-150
AL - 220	GMC-180, 220
AL - 400	GMC-300, 400



Insulation barrier unit

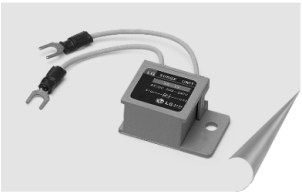
(Table 30)

Type	Applied contactors	No.
AI- 100	GMC-100, 125, 150	4pcs
AI - 180	GMC-180, 220, 300, 400	
AI - 600	GMC-600, 800	

Pneumatic

(Table 31)

Type	Delay	Time	Aux.	Applied contactors
UT - 1N	ON delay	0.1~0.3 sec	1NO1NC	GMC-9~GMC-85
UT - 2N		10~180 sec		
UT - 1F	OFF delay	0.1~30 sec		
UT - 2F		10~180 sec		



Surgy absorber unit

Specification

(Table 32)

Type	Element	Operation voltage	Element Spec.	Applied contactors
AS - 11	Varistor	AC/DC 24~48V	Varistor 120V	GMC -9~GMC-800
AS - 12		AC/DC 100~125V	Varistor 270V	
AS - 13		AC/DC 200~240V	Varistor 470V	
AS - 14		AC 380~440V	Varistor 1000V	
AS - 1	CR + Varistor	AC 24~48V	Varistor 120V 0.1μF, 100Ω	GMC-9~GMC-85
AS- 2		AC 100~125V	Varistor 270V 0.1μF, 100Ω	
AS - 3		AC 200~240V	Varistor 470V 0.1μF, 100Ω	
AS - 4		DC 24~48	Varistor 120V 0.47μF, 100Ω	GMD-9~GMD-85
AS - 5		DC 100~125	Varistor 270V 0.47μF, 100Ω	
AS - 6		DC 200~220V	Varistor 470V 0.47μF, 100Ω	

characteristics

(Table 33)

Surge absorber Unit	Performance	Surge wave
Without Unit	Surge voltage, arise when the coils is off, may provoke misoperation and damages in the circuit	
With Varistor	Varistor has an effect to cut down the peak voltage	
With CR-Varistor	Effect to down the peak voltage and high frequency wave	

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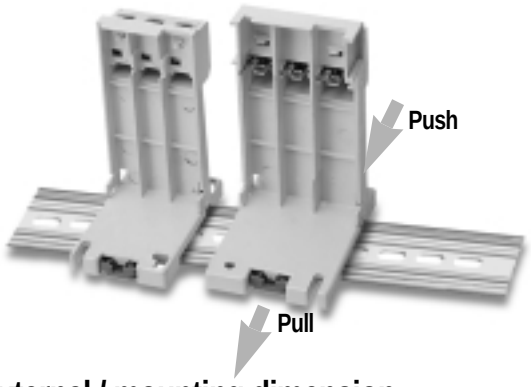
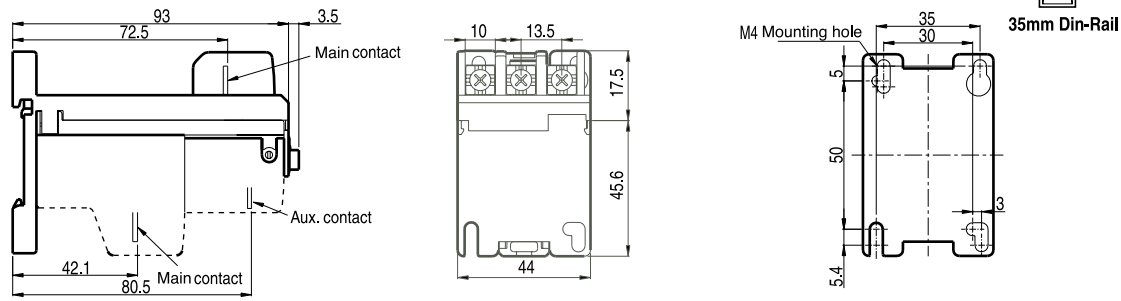
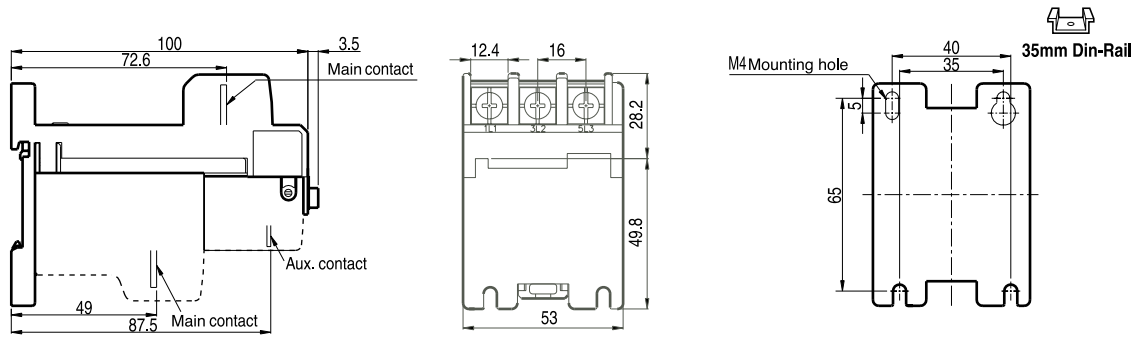
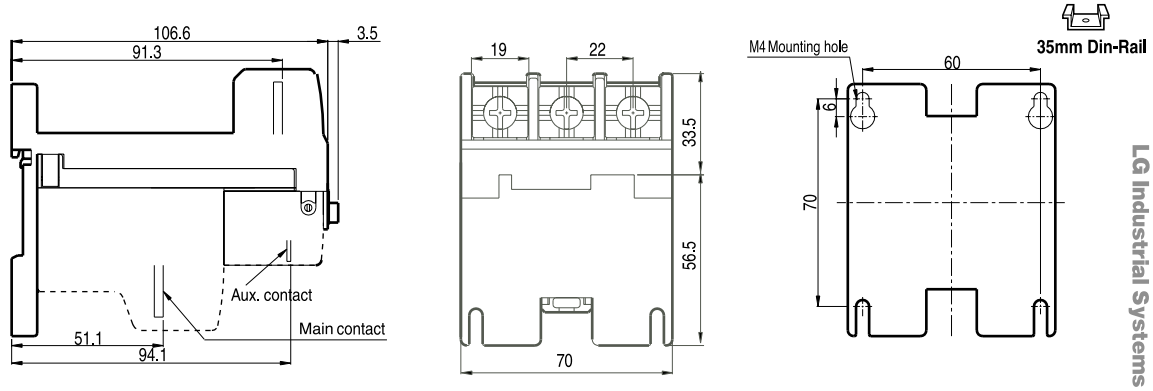


Separate mounting unit

In case of installing the over load relays independently, the separate mounting kits are available for screw or 35mm Din-rail mounting.

Type	Applied TOR
AZ - 22H	GTH(K) - 22
AZ - 40H	GTH(K) - 40
AZ - 85H	GTH(K) - 85

External / mounting dimension

Type	External / mountig dimension
AZ - 22H	 44g
AZ - 40H	 72g
AZ - 85H	 144g

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Thermal Overload Relays

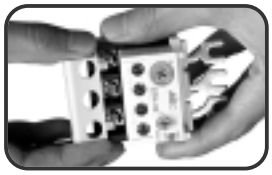
Application

The TOR protect the motors Overload, Locking, Open phase(differential)

Characteristics

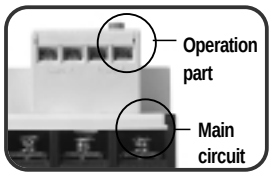
① Direct mounting structure

The TOR is mouvted directly to the Magnetic Contactors without addition brackets. (Applied model : GTH-22, 40, 85)



② Safety cover

The finger proof safety cover prevent careless touch of electric conductor (Applied model : GTH-22, 40, 85)



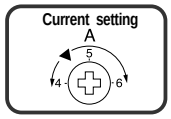
③ Separation of power part and operation part

The main circuit and the operation part are separately designed and the operation part is commonly used in GTH-22, 40, 85

④ Easy operation

- **3steps current setting**

  Rotating the nob by use "+" "-" shape screw driver and set the rated current.



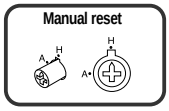
- **Manual -auto reset setting**

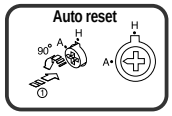
  Manual reset

  Rotate the reset button to the "H" position and will protruded.

  Auto reset

  Rotate the reset button to the "A" position.





- **Trip / reset indicator**

  If the TOR is tripped, it protrued 2~3mm and indicate the tripped condition.

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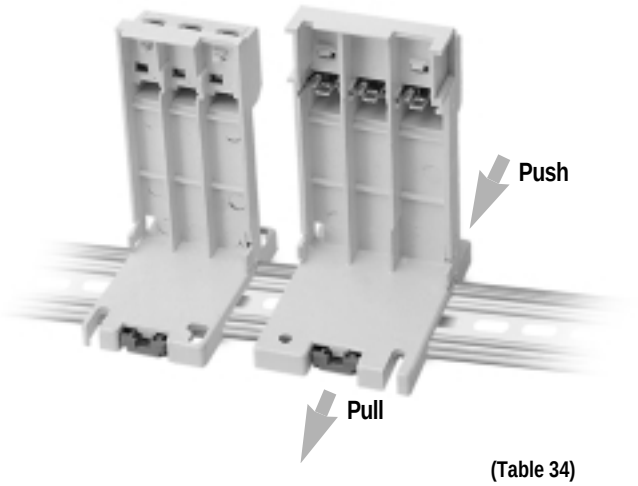

Separate mounting unit (AZ-H)

In case of installing the overload relays independently, the separate mounting kits are available for screw or 35mm Din-rail mounting.
(Applied model : GTH-22, 40, 85)

Rating of the Aux.contacts

(Table 34)

Type	Rated current (A)				
	AC15 duty			DC13 duty	
	110V	220V	550V	110V	110V
GTH-22, 40, 85	2.5(0.3)	2(0.3)	1(0.3)	0.28(0.28)	0.14(0.14)
GTH-100, 125, 150, 220, 400, 600	2.5(0.3)	2(0.3)	1(0.3)	0.28(0.28)	0.14(0.14)

Note) Are the ratings of NO contact under auto reset mode.

Combination of MC and TOR

(Table 35)

Magnetic contactors	Thermal Overload Relays
GMC - 9	GTH(K) - 22
GMC - 12	
GMC - 18	
GMC - 22	
GMC - 32	GTH(K) - 40
GMC - 40	
GMC - 50	GTH(K) - 85
GMC - 65	
GMC - 75	
GMC - 85	
GMC - 100	GTH(K) - 100
GMC - 125	
GMC - 150	GTH(K) - 150
GMC - 180	GTH(K) - 220
GMC - 220	
GMC - 300	GTH(K) - 400
GMC - 400	
GMC - 600	GTH(K) - 600
GMC - 800	

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Thermal Overload Relays

Types and ratings

Ratings	Type / Nominal current	GTH - 22 Ranges Min.	GTH - 22 Ranges Mid.	GTH - 22 Ranges Max.	GTH - 40 Ranges Min.	GTH - 40 Ranges Mid.	GTH - 40 Ranges Max.	GTH - 85 Ranges Min.	GTH - 85 Ranges Mid.	GTH - 85 Ranges Max.
Rated current (A)	0.14	0.1	0.14	0.16						
	0.21	0.16	0.21	0.25						
	0.33	0.25	0.33	0.4						
	0.52	0.4	0.52	0.63						
	0.82	0.63	0.82	1						
	1.3	1	1.3	1.6						
	2.1	1.6	2.1	2.5						
	3.3	2.5	3.3	4						
	5	4	5	6	4	5	6			
	6.5	5	6.5	8	5	6.5	8			
	7.5	6	7.5	9	6	7.5	9			
	8.5	7	8.5	10	7	8.5	10	7	8.5	10
	11	9	11	13	9	11	13	9	11	13
	15	12	15	18	12	15	18	12	15	18
	19	16	19	22	16	19	22	16	19	22
	22				18	22	26	18	22	26
	30				24	30	36	24	30	36
	34				28	34	40	28	34	40
	42							34	42	50
	55							45	55	65
	65							54	65	75
	74							63	74	85
Element No.	2heaters	standard			standard			standard		
	3heaters	option			option			option		
Aux. contact		1NO1NC			1NO1NC			1NO1NC		
Reset type		Auto / Manual			Auto / Manual			Auto / Manual		
Power consumption		1.8VA / heater			2.0VA/ heater			3.5VA/ heater		
Dimension (mm)	(W ×H ×D)	44 ×63 ×90			53 ×67 ×97			70 ×73 ×103		
Separate mounting unit		AZ - 22H			AZ - 40H			AZ - 85H		
Other model	3heaters	GTH - 22/3			GTH - 40/3			GTH - 85/3		
	Differential	GTK - 22			GTK - 40			GTK - 85		
	Delay open	GTH - 22/L			GTH - 40/L			GTH - 85/L		
Applied contactors		GMC - 9, 12, 18, 22			GMC - 32, 40			GMC - 50, 65, 75, 85		
Applied switches		GMS - 9, 12, 18, 22			GMS - 32, 40			GMS - 50, 65, 75, 85		

Selection

Full load current in motor (4 pole) 440V 60Hz P(kW)	440V 60Hz In(A)	220V 60Hz P(kW)	220V 60Hz In(A)	GTH - 22	GTH - 40	GTH - 85
				0.1 ~ 0.16		
				0.16 ~ 0.25		
0.1	0.36			0.25 ~ 0.4		
				0.4 ~ 0.63		
0.2	0.7	0.1	0.71	0.63 ~ 1		
		0.2	1.4	1 ~ 1.6		
0.75	1.8	0.4	2.3	1.6 ~ 2.5		
1.5	3.3	0.75	3.6	2.5 ~ 4		
2.2	4.6			4 ~ 6	4 ~ 6	
		1.5	6.5	5 ~ 8	5 ~ 8	
3.7	7.5			6 ~ 9	6 ~ 9	
		2.2	9.2	7 ~ 10	7 ~ 10	7 ~ 10
5.5	11			9 ~ 13	9 ~ 13	9 ~ 13
7.5	15	3.7	15	12 ~ 18	12 ~ 18	12 ~ 18
				16 ~ 22	16 ~ 22	16 ~ 22
11	21	5.5	22		18 ~ 26	18 ~ 26
15	28	7.5	29		24 ~ 36	24 ~ 36
18.5	34				28 ~ 40	28 ~ 40
22	39	11	42			34 ~ 50
30	54	15	55			45 ~ 65
37	66	18.5	67			54 ~ 75
						63 ~ 85

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Types and ratings

Ratings Nominal current	Type	GTH - 100			GTH - 150			GTH - 220			GTH - 400			GTH - 600		
		Ranges			Ranges			Ranges			Ranges			Ranges		
		Min.	Mid.	Max	Min.	Mid.	Max.	Min.	Mid.	Max.	Min.	Mid.	Max.	Min.	Mid.	Max.
Rated current (A)	41	34	41	50	34	41	50									
	48	39	48	57	39	48	57									
	56	43	56	65	43	56	65									
	67	54	67	80	54	67	80									
	80	65	80	100	65	80	100	65	80	100						
	107	85	107	125	85	107	125	85	107	125	85	107	125			
	130				100	130	150	100	130	160	100	130	160			
	150							120	150	180	120	150	180			
	200							160	200	240	160	200	240			
	250										200	250	300	200	250	300
	350										260	350	400	260	350	400
	500													400	500	600
	660													520	660	800
Element No.	2heaters	standard			standard			standard			standard			standard		
	3heaters	option			option			option			option			option		
Aux. contact		1NO1NC			1NO1NC			1NO1NC			1NO1NC			1NO1NC		
Reset type		Auto / Manual			Auto / Manual			Auto / Manual			Auto / Manual			Auto / Manual		
Power consumption		2.3VA / heater			2.3VA/ heater			2.3VA/ heater			2.3VA / heater			2.3VA / heater		
Dimension (mm)	(W×H×D)	103×67×105			112×87×105			144×114×180			144×160×194			255×200×193		
Other model	3heaters	GTH - 100/3			GTH - 150/3			GTH - 220/3			GTH - 400/3			GTH - 600/3		
	Differential	GTK - 100			GTK - 150			GTK - 220			GTK - 400			GTK - 600		
	Delay open	GTH - 100/L			GTH - 150/L			GTH - 220/L			GTH - 400/L			GTH - 600/L		
Applied contactors		GMC - 100,125			GMC - 150			GMC - 180, 220			GMC - 300, 400			GMC - 600, 800		
Applied switches		GMS - 100,125			GMS - 150			GMS - 180, 220			GMS - 300, 400			GMS - 600, 800		

Selection

Full load current in motor (4 pole)				GTH - 100	GTH - 150	GTH - 220	GTH - 400	GTH - 600
440V 60Hz		220V 60Hz						
P(kW)	In(A)	P(kW)	In(A)					
22	39	11	42	34 ~ 50	34 ~ 50			
				39 ~ 57	39 ~ 57			
30	54	15	55	43 ~ 65	43 ~ 65			
37	66	18.5	67	54 ~ 80	54 ~ 80			
45	80	22	78	65 ~ 100	65 ~ 100	65 ~ 100		
55	99	30	107	85 ~ 125	85 ~ 125	85 ~ 125	85 ~ 125	
75	135	37	132		100 ~ 150	100 ~ 160	100 ~ 160	
90	160	45	160			120 ~ 180	120 ~ 180	
110	192	55	198			160 ~ 240	160 ~ 240	
132	226						200 ~ 300	200 ~ 300
160	265	75	270					
200	330	90	320				260 ~ 400	260 ~ 400
-	-	132	452					400 ~ 600
-	-	160	530					
								520 ~ 800

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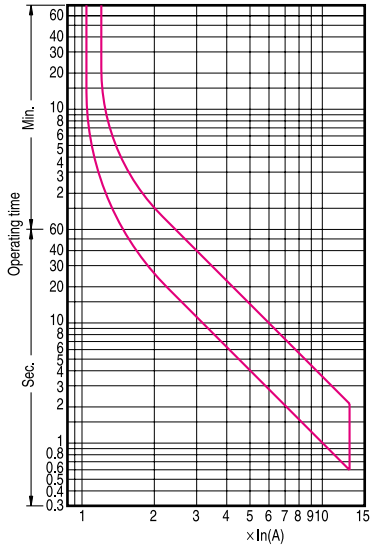
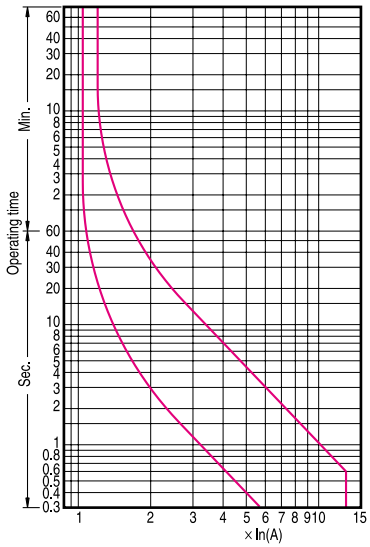
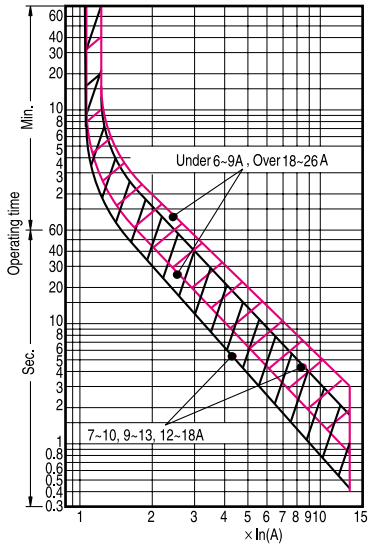
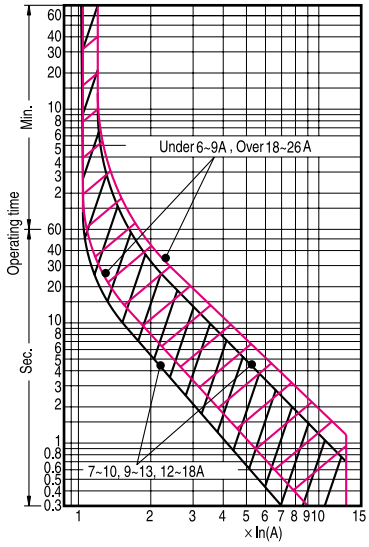
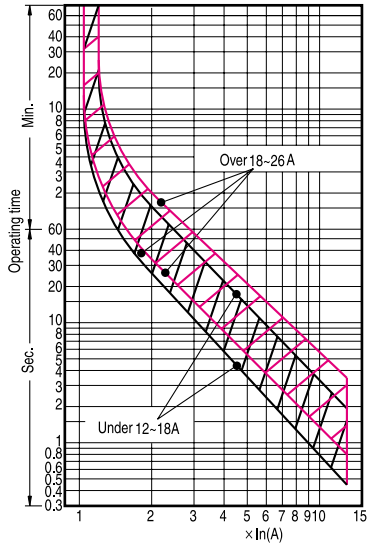
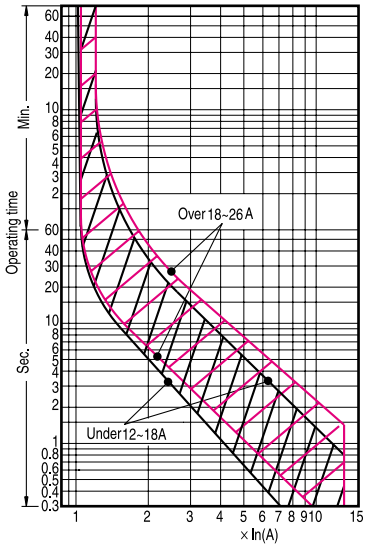
TOR characteristics curve (GTH-22~85)

Type	Cold Start	Hot Start
GTH - 22		
GTH - 40		
GTH - 85		

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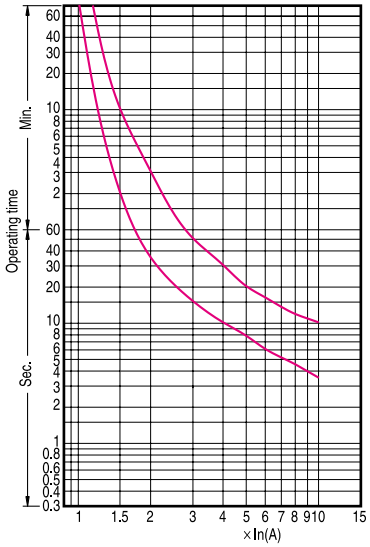
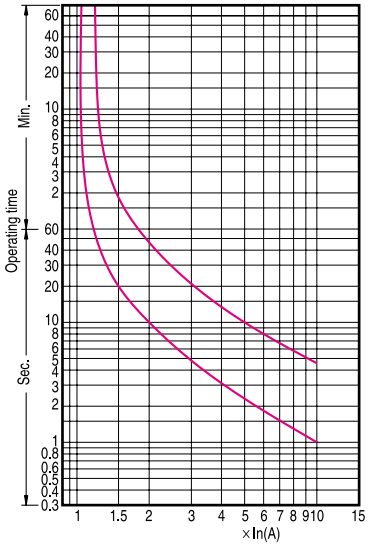
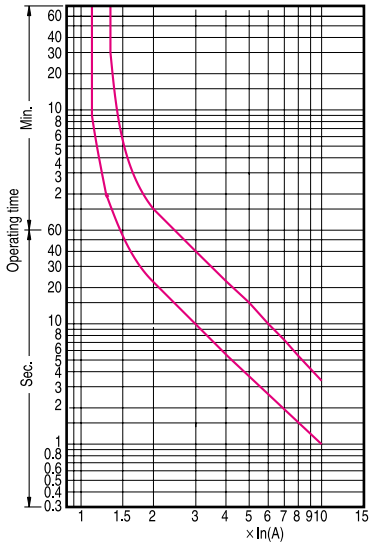
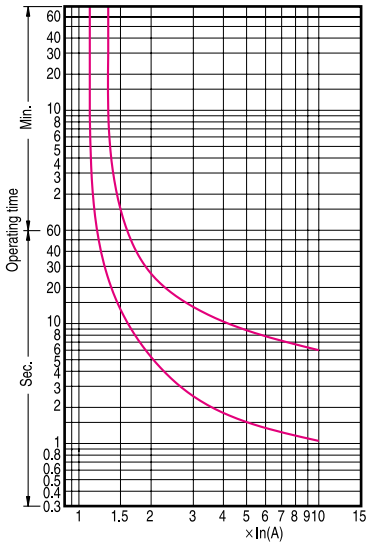
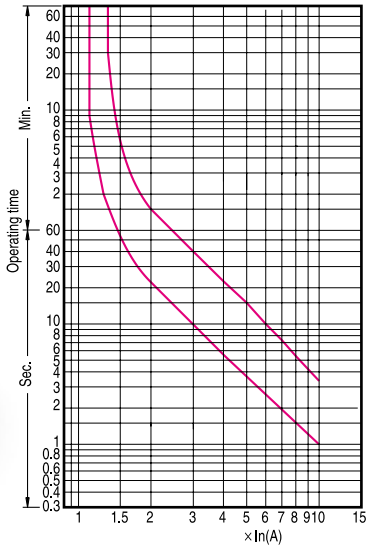
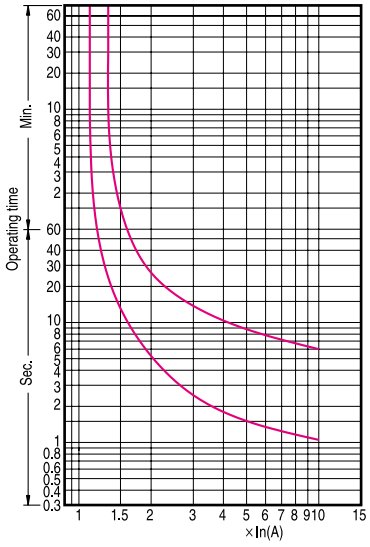
TOR characteristics curve (GTH-100~600))

Type	Cold Start	Hot Start
GTH - 100 150		
GTH - 220 400		
GTH - 600		

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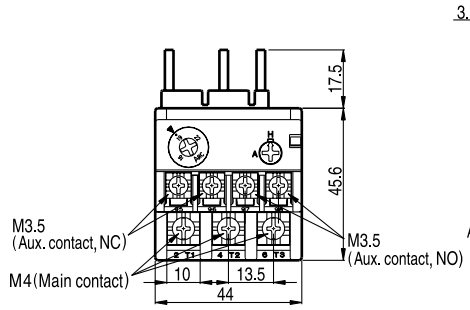
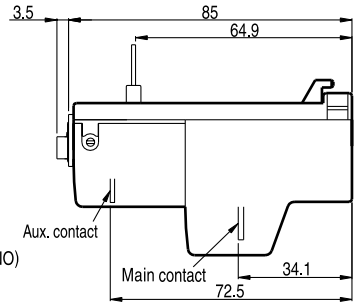
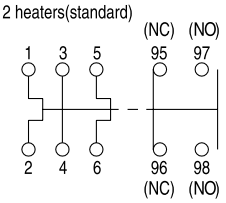
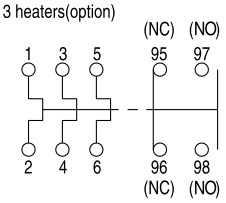
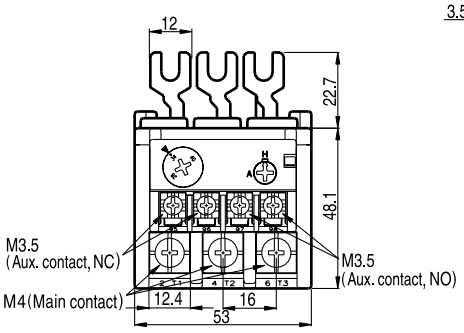
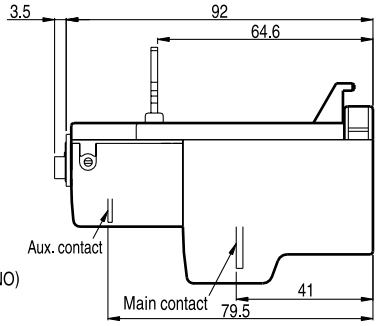
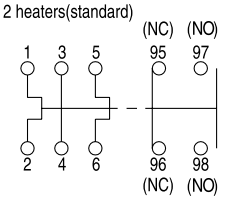
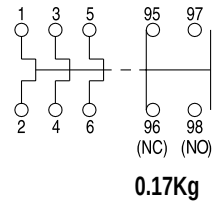
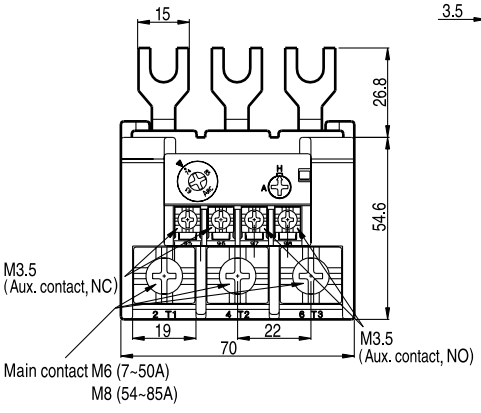
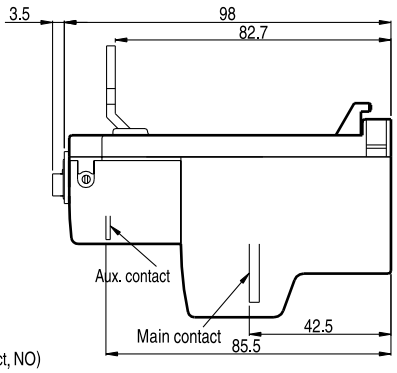
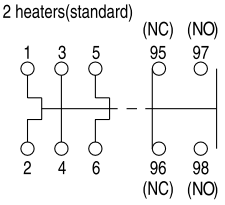
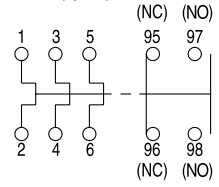
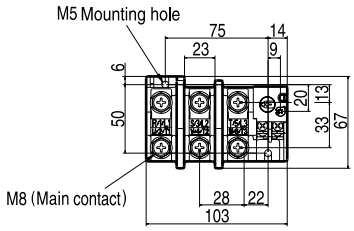
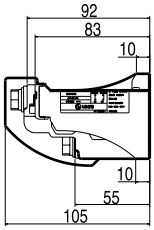
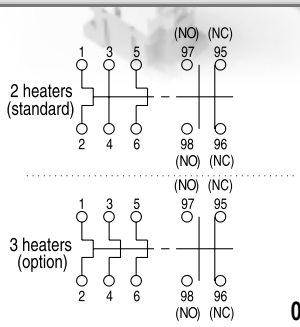
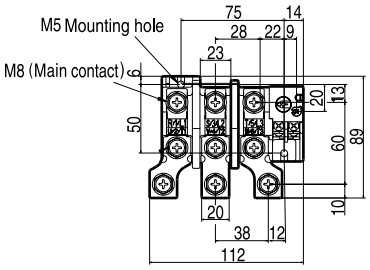
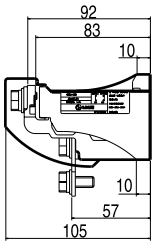
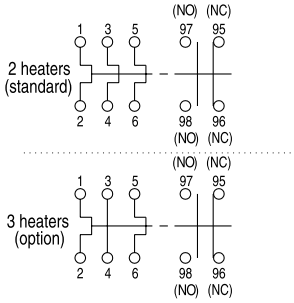
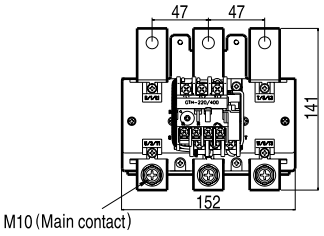
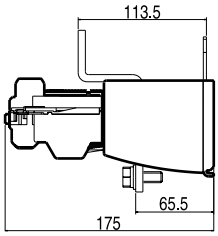
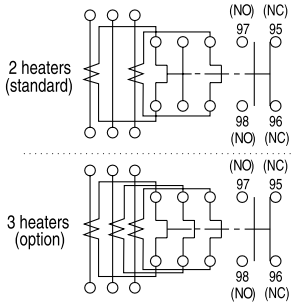
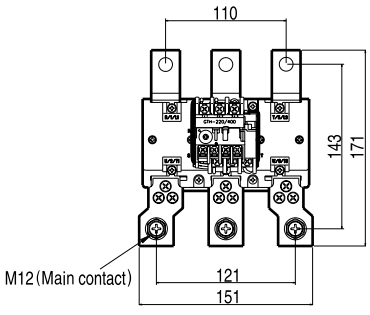
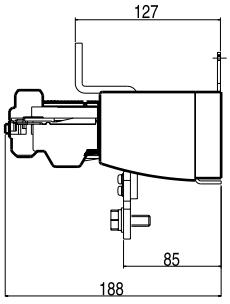
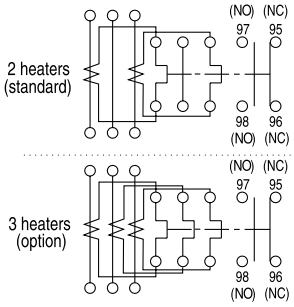
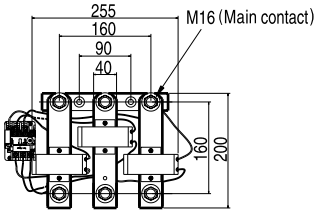
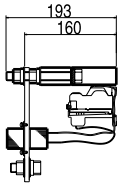
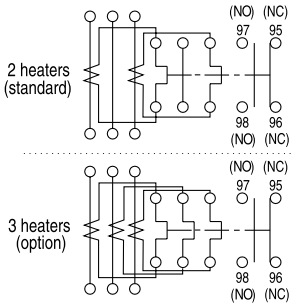
Thermal Overload Relays

External / Mounting dimension (GTH(K)-22~85)

Type	External dimensions	Contacts Configuration
GTH(K) - 22	 	2 heaters(standard)  3 heaters(option)  **0.11Kg**
GTH (K) - 40	 	2 heaters(standard)  3 heaters(option)  **0.17Kg**
GTH(K) - 85	 	2 heaters(standard)  3 heaters(option)  **0.3Kg**

External / Mounting dimension (GTH(K)-100~600)

Type	External dimensions		Contacts Configuration	
GTH(K) - 100				0.48Kg
GTH(K) - 150				0.6Kg
GTH(K) - 220				2.5Kg
GTH(K) - 400				2.6Kg
GTH(K) - 600				5.5Kg

Note) ∗ GTK series has 3 heaters

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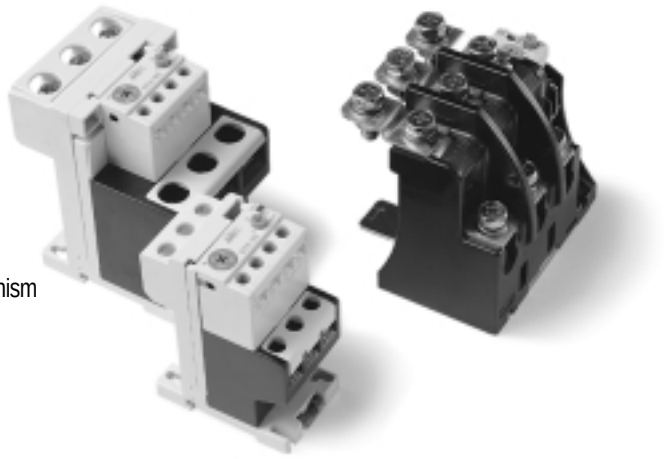
Thermal Overload Relays

(Differential type)



- GTK series TOR adopt the ADL(Amplified Differential Lever) mechanism and protect motors from overload, open phase(differential)and etc.
- Ratings and exernal dimension are the same with the GTH series.

Selection

Full load current in motor(4pole)				GTK - 22	GTK - 40	GTK - 85	GTK - 100	GTK - 150	GTK - 220	GTK - 400	GTK - 600
4P 440V 60Hz		4P 220V 60Hz									
P(kW)	In(A)	P(kW)	In(A)								
				0.1 ~ 0.16							
				0.16 ~ 0.25							
0.1	0.36			0.25 ~ 0.4							
				0.4 ~ 0.63							
0.2	0.7	0.1	0.71	0.63 ~ 1							
		0.2	1.4	1 ~ 1.6							
0.75	1.8	0.4	2.3	1.6 ~ 2.5							
1.5	3.3	0.75	3.6	2.5 ~ 4							
2.2	4.6			4 ~6	4 ~ 6						
			1.5	5 ~ 8	5 ~ 8						
3.7	7.5			6 ~ 9	6 ~ 9						
		2.2	9.2	7 ~ 10	7 ~ 10	7 ~ 10					
5.5	11			9 ~13	9 ~ 13	9 ~13					
7.5	15	3.7	15	12 ~18	12 ~ 18	12 ~ 18					
				16 ~22	16 ~ 22	16 ~ 22					
11	21	5.5	22		18 ~ 26	18 ~ 26					
15	28	7.5	29		24 ~ 36	24 ~ 36					
18.5	34				28 ~ 40	28 ~ 40					
22	39	11	42			34 ~ 50	34 ~ 50	34 ~ 50			
30	54	15	55			45 ~ 65	39 ~ 57	39 ~ 57			
37	66	18.5	67			54 ~ 75	43 ~ 65	43 ~ 65			
						63 ~ 85	54 ~ 80	54 ~ 80			
45	80	22	78				65 ~ 100	65 ~ 100	70 ~ 100		
55	99	30	107					85 ~ 125	85 ~ 125	85 ~ 125	
75	135	37	132					100 ~ 150	100 ~ 160	100 ~ 160	
90	160	45	160						120 ~ 180	120 ~ 180	
110	192	55	198						160 ~ 240	160 ~ 240	
132	226									220 ~ 300	200 ~ 300
160	265	75	270								
200	330	90	320							260 ~ 400	260 ~ 400
-	-	132	452								400 ~ 600
-	-	160	530								
											520 ~ 800
Applied magnetic contactors				GMC - 9 12 18 22	GMC - 32 40	GMC - 50 65 75 85	GMC - 100 120	GMC - 150	GMC - 180 220	GMC - 300 400	GMC - 600 800

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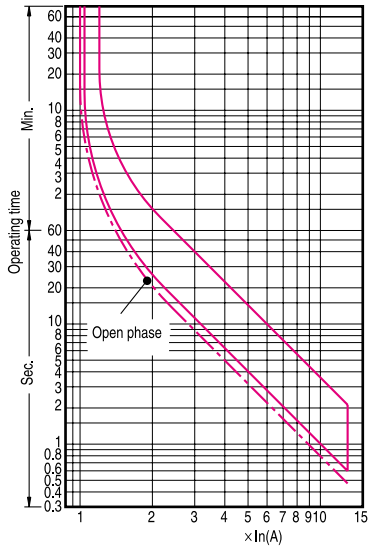
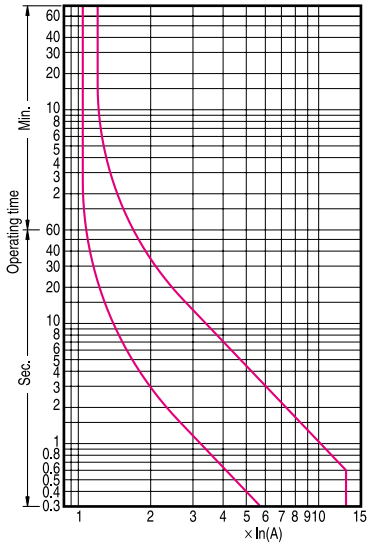
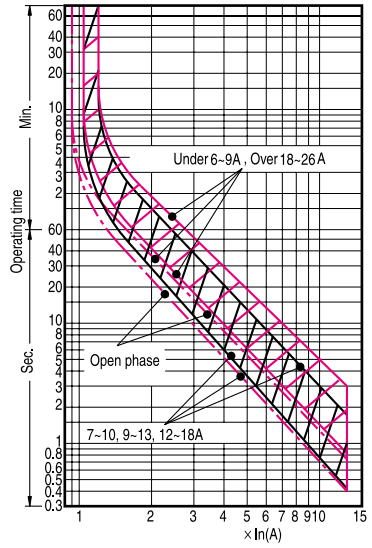
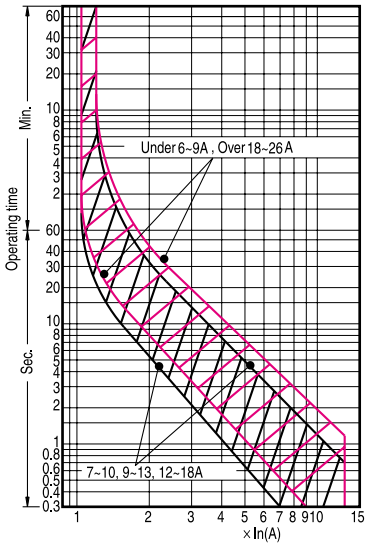
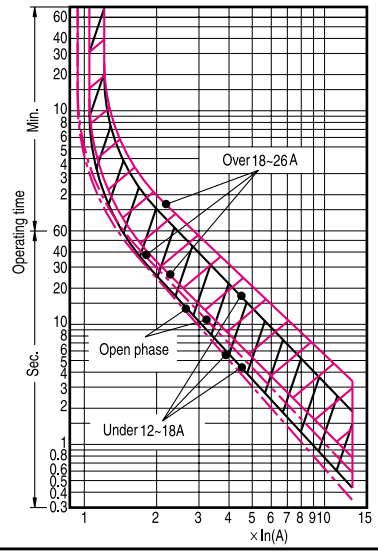
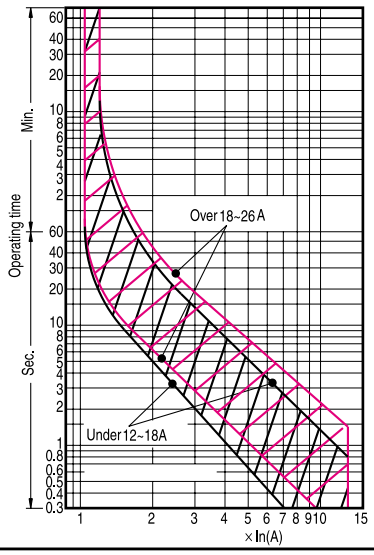
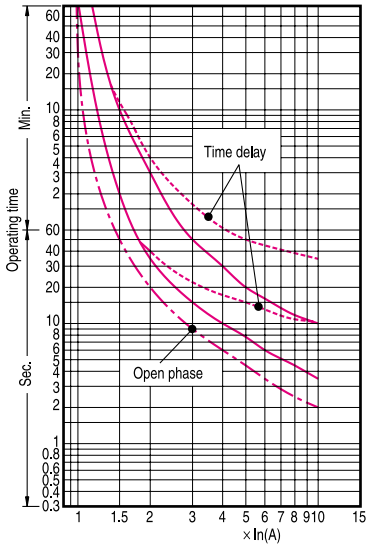
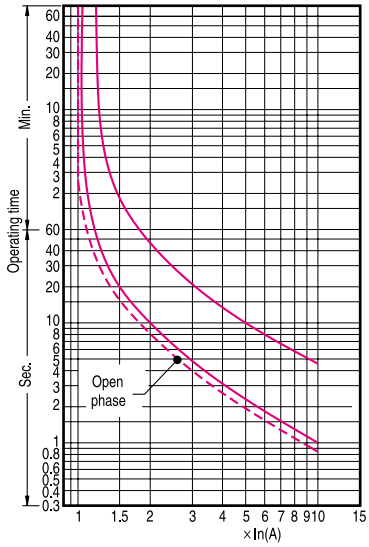
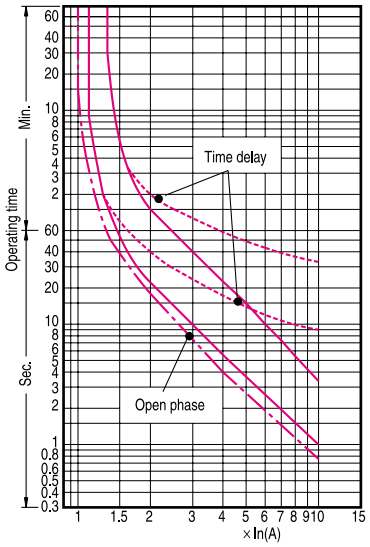
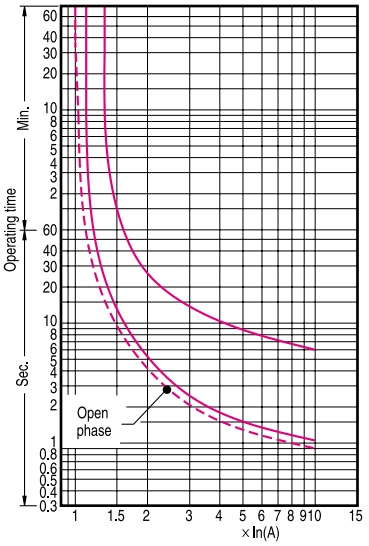
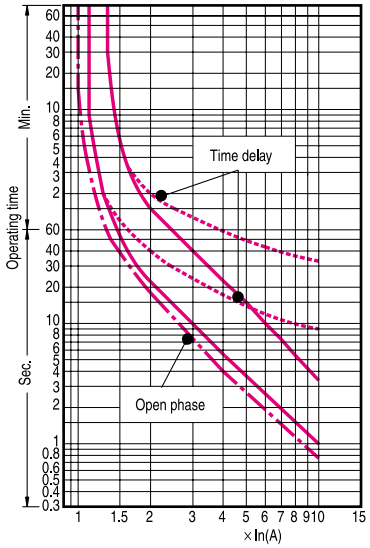
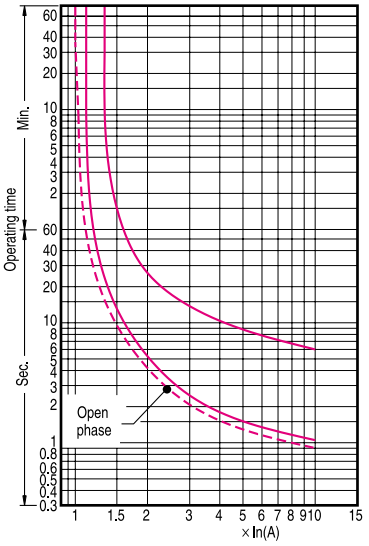
Thermal Overload Relays

(Differential type)

TOR characteristics curve (GTK-22~85)

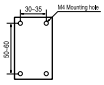
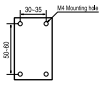
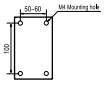
Type	Cold Start	Hot Start
GTK - 22		
GTK - 40		
GTK - 85		

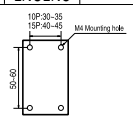
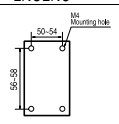
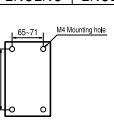
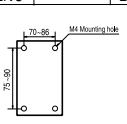
TOR characteristics curve (GTK-100~600)

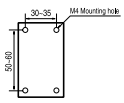
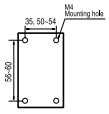
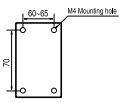
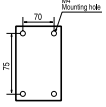
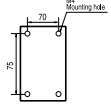
Type	Cold Start	Hot Start
GTK - 100 150		
GTK - 220 400		
GTK - 600		

Comparison with the old series Contactors (SMC, CH series)

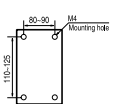
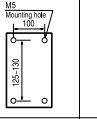
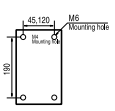
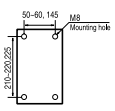
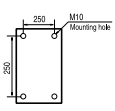
Low AF contactors

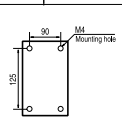
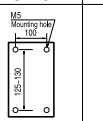
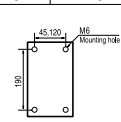
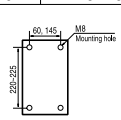
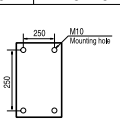
Type	GMC-9	GMC-12	GMC-18	GMC-22	GMC-32	GMC-40		GMC-50	GMC-65	GMC-75	GMC-85
Aux. Contact(standard)	1NO1NC	1NO1NC	1NO1NC	1NO1NC	1NO1NC	2NO2NC		2NO2NC	2NO2NC	2NO2NC	2NO2NC
Mounting dimension											
Dimension (W×H×D)	44×80×86.8				68×82×94.6			94×122×115.7			
Weigh(kg)	0.33		0.37		0.45			1			

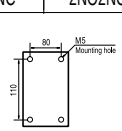
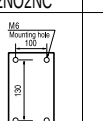
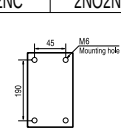
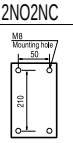
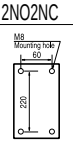
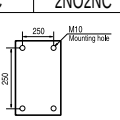
Type		SMC-10P	SMC-15P		SMC-20P	SMC-25P	SMC-35P	SMC-48P	SMC-50P	SMC-65P		SMC-80P
Aux. Contact(standard)		1NO	1NO1NC		2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC		2NO2NC
Mounting dimension												
Dimension (W×H×D)		44×77.5×80(10P) 54×77.5×80(15P)			68×90×96	78×90×102			94×120×115.5			
Weigh(kg)		0.28	0.34		0.53	0.61			1.15			1.15
GMC Compatibility		○	○		△	△			△			△

Type		CH-3	CH-3N		CH-5	CH-5N	CH-6N	CH-7.5N		CH-10N	CH-15N		CH-20NS
Aux. Contact(standard)		1NO	1NO1NC		1NO1NC	2NO2NC	2NO2NC	2NO2NC		2NO2NC	2NO2NC		2NO2NC
Mounting dimension													
Dimension (W×H×D)		44×78×80(3) 53×78×80(3N)			64×78×81.5(5) 64×78×109(5N)		74×87×103			88×110×118	88×125×137.5		
Weigh(kg)		0.33	0.35		0.39	0.44	0.6			1.3			1.5
GMC Compatibility		○	○		△	△	△			△			×

High AF contactors

Type	GMC-100	GMC-125	GMC-150	GMC-180	GMC-220	GMC-300	GMC-400	GMC-600	GMC-800
Aux. Contact(standard)	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC
Mounting dimension									
Dimension (W×H×D)	100×157.4×146.5		120×166×157	138×203×181		163×243×198		285×290×242	
Weigh(kg)	2.9	2.9	3.4	5.4	5.4	9.2	9.2	22	22

Type	SMC-100P	SMC-125P	SMC-150P	SMC-180P	SMC-220P	SMC-300P	SMC-400P	SMC-600P	SMC-800P
Aux. Contact(standard)	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC
Mounting dimension									
Dimension (W×H×D)	100×150×136		120×160×145	138×204×174		163×243×195		290×310×234	
Weigh(kg)	2.7	2.7	3.3	5.5	5.5	9.5	9.5	24	24
GMC Compatibility	○	○	○	○	○	○	○	○	○

Type	CH-25NS	CH-30NS	CH-40NS	CH-50NS	CH-75NS	CH-90NS	CH-100NS	CH-150NS	CH-200NS
Aux. Contact(standard)	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC	2NO2NC
Mounting dimension									
Dimension (W×H×D)	100×148×151		120×167×168	138×210×194		148×230×209	163×240×231	290×332×327	
Weigh(kg)	2.5	2.5	3.4	5.2	5.2	6.7	9	32	32
GMC Compatibility	○	○	○	○	○	○	○	○	○

Note) ○: Compatible, △: Additional bracket is replace with he series MC, ×: Incompatible

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LG constantly endeavors to improve our products, so that information in this catalog is subject to change without notice.

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